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A Collector's Guide to

W. B. Thompson
D. L. Joyner
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Maine Mineral Localities

Maine Geological Survey
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DEPARTMENT OF CONSERVATION

BULLETIN 41

Third Edition

A Collector's Guide to Maine Mineral Localities

by

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Maine Geological Survey
Natural Resources Information and Mapping Center
DEPARTMENT OF CONSERVATION

1998

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Front cover photograph: Elbaite crystals. Crystal at left is 4.5 cm tall; crystal at right is 5 cm tall; gem weighs 2 carats. From the Havey Quarry, Poland, Maine. Photo copyright 1995 by Wendell E. Wilson.

Back cover photograph: Pink tourmaline (elbaite) on quartz crystals, 24 x 10 mm, from the Bennett Quarry, Buckfield, Maine. Mined in 1996 by Holden Brothers Mining and currently in the Jim Mann collection. Photo by John B. Poisson.

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**PARKER CLEAVELAND
1780-1858**

This guidebook is dedicated to Parker Cleaveland, who in 1805 became the first professor of mineralogy at Bowdoin College in Brunswick, Maine. Cleaveland was one of the most prominent mineralogists of the early 1800's. His *Elementary Treatise on Mineralogy and Geology* (1816) was the first textbook on American mineralogy (Mitchell, 1987). The "cleavelandite" variety of albite feldspar, which was named after him, can be found at numerous localities in southwestern Maine. (Portrait from Merrill, 1906)



Paris Hill, Me., Mt. Mica Mine.



Paris Hill, Me., The Cut, Mt. Mica Mine.

Postcards from the early 1900's, showing Loren Merrill's tourmaline mining operation at Mount Mica.

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Chapter I

Introduction

Maine is world famous for the colorful crystals of tourmaline, beryl, and rare minerals that are found in veins of coarse granite called "pegmatites." Other interesting types of mineral localities also occur in the state. This book will provide you with information on these localities, including directions on how to find them and suggestions to help make your collecting trips more productive. Chapter 2 contains descriptions of the geologic settings of Maine minerals and lists sources of additional information. There are also tips on mineral collecting equipment and techniques for those who are new to the hobby.

Several previous guidebooks have been published by individuals, mineral clubs, and State agencies. We acknowledge the efforts of these industrious forerunners in gathering and disseminating information on Maine minerals. In order to be really useful, a guidebook must provide the reader with adequate directions to go out and find the collecting sites, some of which are merely small holes in the ground located far back in the woods. The maps prepared by Morrill and others (1958) and Morrill and Hinckley (1959) were a major step in this regard, as were the detailed directions to pegmatite localities given by the Federation of Maine Mineral and Gem Clubs (Morrison and others, 1973).

This publication follows the precedent of the Maine Federation guidebook in giving specific driving and walking directions to each mineral collecting site. We have utilized newly available topographic maps at a scale of 1:24,000 (1 inch = 2000 feet). These 7.5-minute quadrangle maps are published by the U.S. Geological Survey, and they often show considerably more detail than the older 1:62,500 (15-minute) map series. The location maps included in this guidebook are portions of the USGS topographic maps. Supplemental labels were added where necessary to show quarry sites, road names, and other useful landmarks.

In addition to giving directions, mineral lists, and other data for each locality, we include background information for those people with little or no previous collecting experience in Maine. Public mineral displays are also listed here, and we have compiled a checklist of Maine minerals and the towns in which they have been found.

FORMAT OF LOCALITY DESCRIPTIONS

A comprehensive inventory of Maine mineral localities is beyond the scope of this guidebook. Instead we have described 55 of the most interesting and accessible collecting sites, the locations of which are shown on the index map (Figure 1). These sites include many classic mineral localities such as the tourmaline mines at Newry and Mount Mica in Paris. We have also chosen a variety of less familiar localities that are open for collecting. The investment of time and effort at the lesser known places sometimes yields better specimens than are usually found nowadays at the famous mines.

The current collecting status of most sites described here was personally field-checked by the authors. The first edition of this guidebook included only sites which were open to the public for mineral collecting. Many of those localities are now closed, in most cases because they have been leased for specimen mining. However, we have retained some of them in the present edition because of their historical and mineralogical significance and the possibility that they may be reopened in the future. The users of this book are encouraged to submit updated information on locality status, along with recommendations for collecting sites not listed here, to the Maine Geological Survey, 22 State House Station, Augusta, ME 04333 (207-287-2801).

Conditions may change quickly, so mineral collectors should do some homework before starting out to the field, and develop an alternative itinerary in case the preferred locality has been closed. *Listing of a site in this guidebook does not guarantee access to the visitor — the owners of private property should always be contacted for permission to collect minerals on their land.* Courteous treatment of landowners and their property is now more important than ever, as the growing number of closed sites results in more collectors visiting those which are still open.

The words "mine" and "quarry" are often used interchangeably in discussing mineral localities. We have followed the convention of using "mine" only for sites that are chiefly underground workings, and for metal-mining operations.

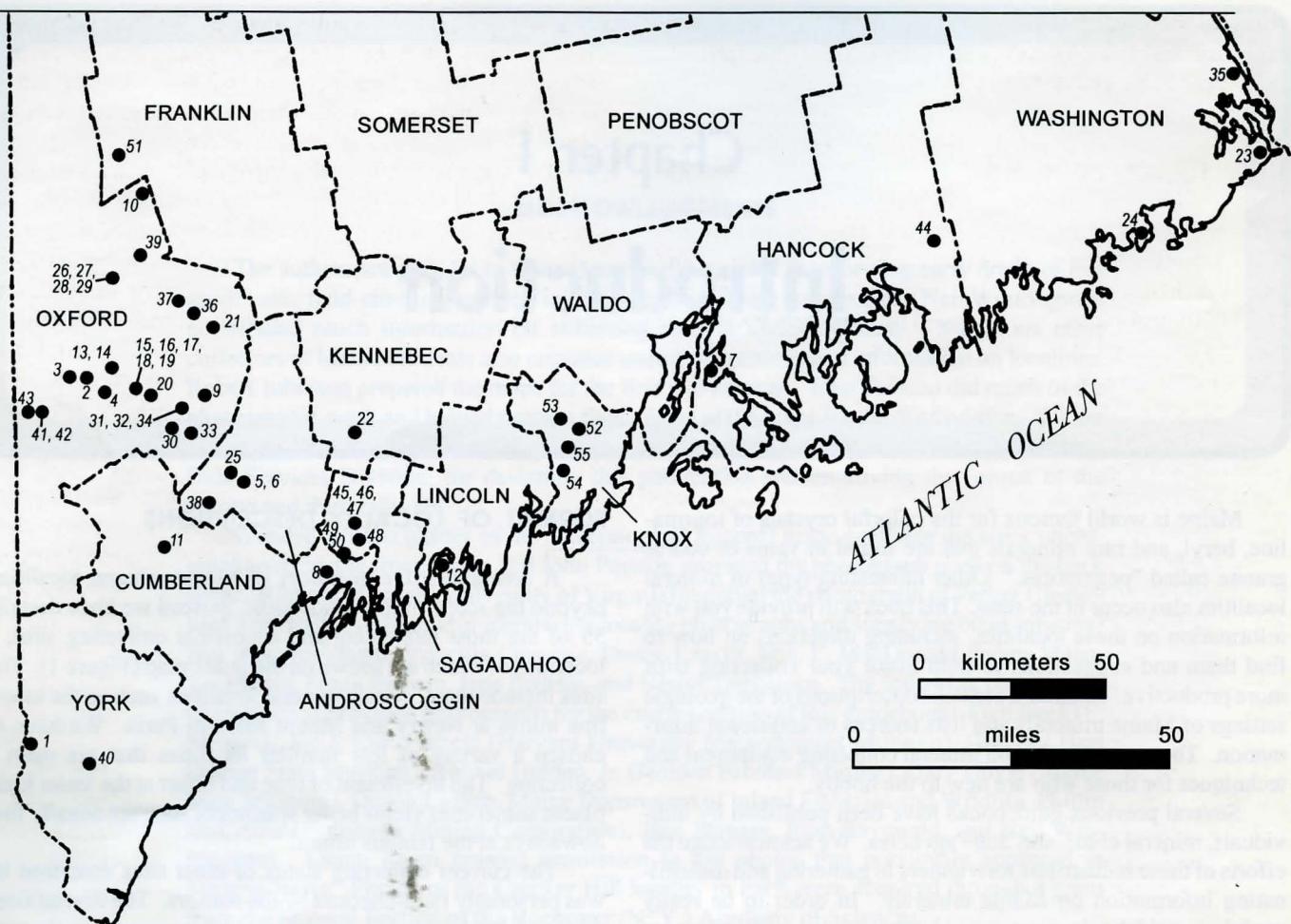


Figure 1. Index map showing locations of sites described in text. Numbers correspond to locality index at end of book.

The description for each site includes a list of minerals which are known to have been found there. This list of "minerals observed" is based on: (1) species personally seen at the locality during field checks by the authors or their colleagues; (2) well-documented specimens in museums and private collections; and (3) carefully researched species lists in other publications, such as King's (1975) list of minerals found at the Newry mines. We have also included a few reported mineral occurrences that have not been verified. These are indicated by a question mark.

Since the second edition of this guidebook appeared, King and Foord (1994) have published volume 1 of the *Mineralogy of Maine*, which describes and illustrates all of the minerals known from Maine and includes photographs of many of them. The reader is referred to this volume for in-depth coverage of Maine's minerals and related literature.

The mineral names listed here conform to the widely accepted names in the Mineral Reference Manual by Nickel and

Nichols (1991). This practice has resulted in the listing of some names for common minerals that may be unfamiliar to the novice collector (e.g. "grossular" and "elbaite" for members of the garnet and tourmaline groups). In such cases, we often give the common group names in parentheses, since they are more easily recognized and may be the only names used in other publications. Confusion may also arise from the reclassification of familiar minerals based on recent analyses. Test results suggest that virtually all of the amblygonite mentioned in earlier lists of Maine minerals is actually montebrasite, yet the name amblygonite still appears in many listings for Maine localities.

Some of our locality descriptions include comments of historical or geological interest, and remarks on famous mineral discoveries. The history of mining for Maine gems and minerals is a fascinating subject. Perham (1987) has written an outstanding book tracing the development of the mineral-rich pegmatite mines in Oxford and Androscoggin Counties. She also describes

many of the best specimens produced by these mines. Other literature, including the citations in the locality descriptions, is referenced at the end of this book.

HOW TO USE THE MAPS

The portions of topographic maps reproduced here are identified according to the U.S. Geological Survey quadrangle map from which they were taken. The maps are at their original scale (1:24,000), and each is accompanied by scale bars graduated in feet and miles. North is toward the top of the page in all cases. The reader may need a road map to find the location and starting point for each itinerary. The DeLorme Mapping Company's *Maine Atlas and Gazetteer* (available in many stores) is very useful for locating roads and their names. The starting points for driving directions in our guidebook are usually located at major road junctions. If the junction lies within the boundaries of our locality map, we have marked it with a *star*. Otherwise, following the directions will bring you into the map area at the point shown by an *arrow*. Look for landmarks described in the itiner-

ary as you proceed to the collecting site. Walking distances are often given in feet, but you can convert them to paces by assuming the average adult pace to be 3 feet. Mineral localities are arranged by town, so that maps for those towns with more than one locality can be grouped together.

If you are unfamiliar with topographic maps, you may be puzzled by the many lines on them. These are *contour lines*, which are used to show elevations and the shapes of hills, valleys, and other terrain features of the Earth's surface (Figure 2). All points along a particular contour line have the same elevation above sea level. Thus, if you follow a level path along a hillside, you are walking parallel to these imaginary lines; but in going uphill or downhill, you cross them. Every fifth contour is a heavy *index contour*. Many of the index contours are labelled on topographic maps, so you can count upward or downward to determine elevations of points of interest. The difference in elevation between adjacent contours, known as the *contour interval*, is either 10 feet or 20 feet on the maps used in this book. Contour lines are closer together on steeper slopes. Where they cross valleys, contours form a "V" pattern that points up the valley, while concentric patterns usually outline hills.

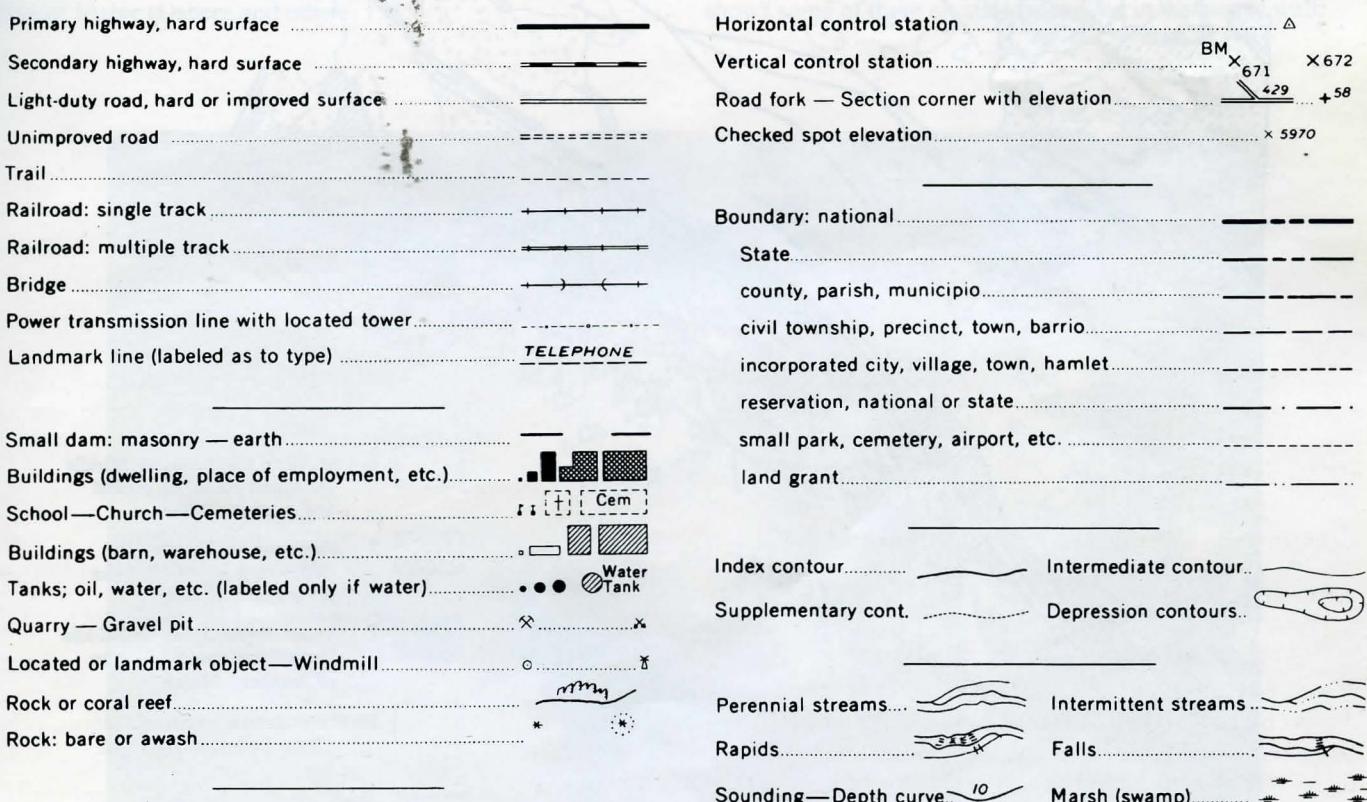


Figure 2. Topographic map symbols.

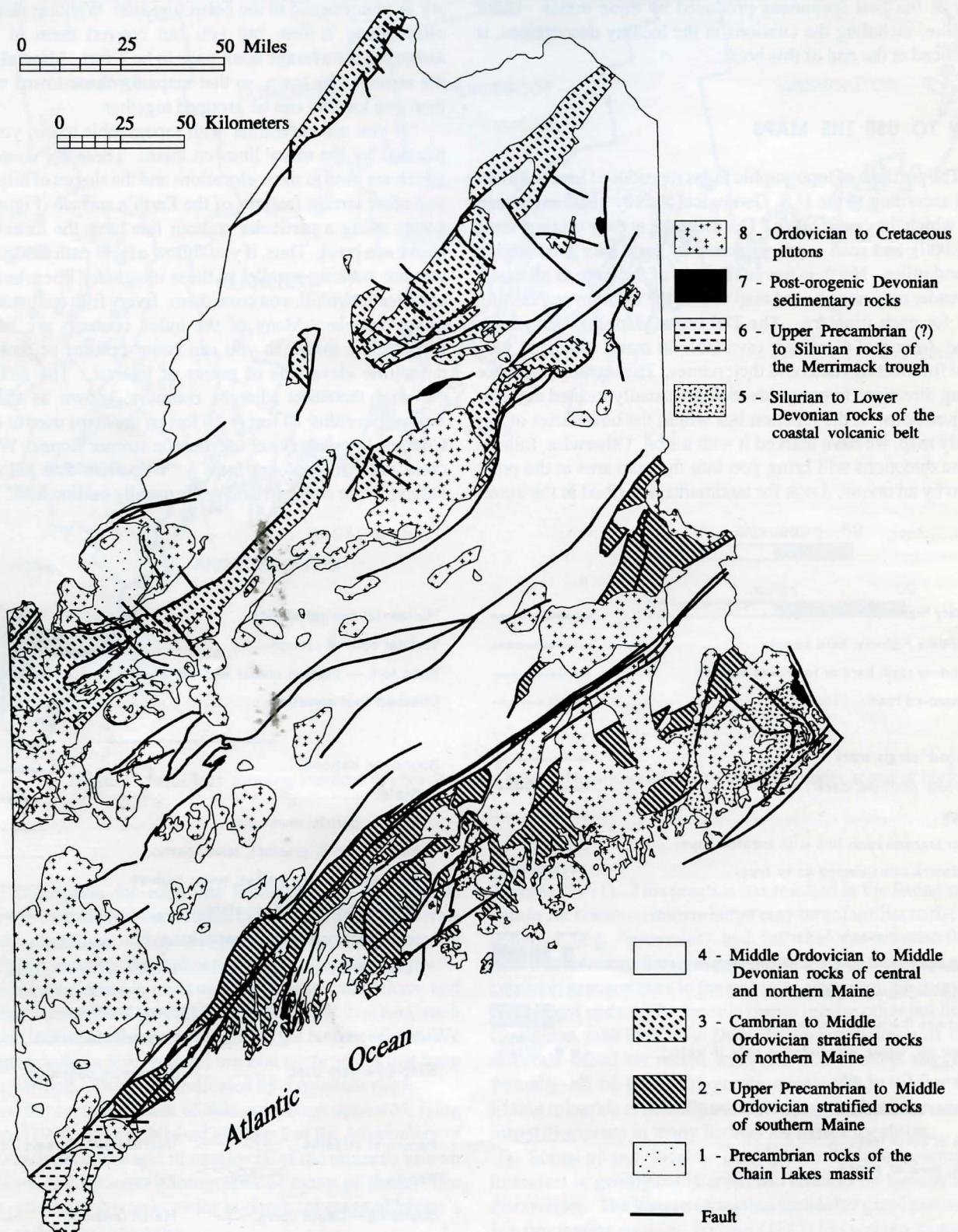


Figure 3. Bedrock geological map of Maine (from Marvinney and Thompson, in prep.; modified from Osberg and others, 1985).

Chapter 2

Collecting Maine Minerals

GEOLOGIC SETTINGS OF MAINE MINERALS

Most of the good mineral localities in Maine occur in one of several common geologic environments, such as granite pegmatites or metamorphic rocks. Each of these settings is briefly described here, so that you will have a better understanding of how the mineral deposits originated. The bedrock geology of the state is shown in Figure 3, simplified from the Bedrock Geologic Map of Maine (Osberg and others, 1985).

Granite Pegmatites

Granite pegmatites are a variety of granite in which the individual mineral grains are so large that they are measured in inches or even in feet. One of the largest of the gigantic beryl crystals found at the Bumpus Quarry (Albany, Maine) in the late 1920's was 18 feet long, 4 feet in diameter, and estimated to weigh about 18 tons (Gedney and Berman, 1929). Figure 4 shows some of these crystals embedded in the quarry wall.



Figure 4. Giant beryl crystals discovered in 1928 at the Bumpus Quarry in Albany. *Photo courtesy of J. C. Perham.*

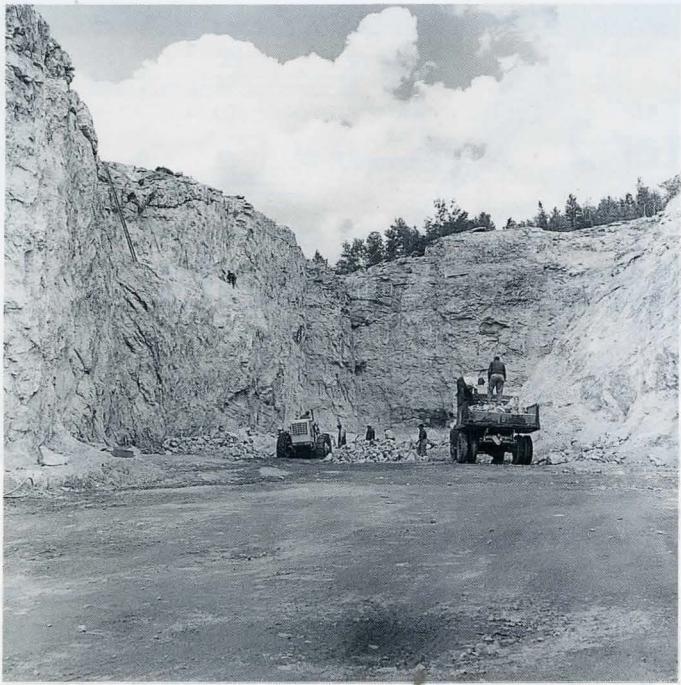


Figure 5. Feldspar mining at the Perham Quarry in West Paris, circa 1960's. *Maine Geological Survey file photo.*



Figure 6. Entrance to underground workings in "Bluff Pit" at the Wardwell Quarry in Albany. Photo probably taken in early 1960's. This locality is currently closed to collecting. *Maine Geological Survey file photo.*

The pegmatites in southwestern Maine formed by the gradual cooling and solidification of fluids derived from nearby granites and other similar igneous rocks, or as a result of partial melting of the host rock during metamorphism. The fluids that formed the pegmatites tended to be enriched in water and rare elements. They often were injected into fractures in the surrounding rock and crystallized to form lenses or wall-shaped masses called "dikes." In some cases the resulting minerals are distributed rather evenly throughout most of the pegmatite. In contrast to these "simple pegmatites" are the "zoned pegmatites," in which there are two or more zones of different mineralogical composition (Cameron and others, 1949). The zones often formed in a roughly concentric pattern around the core of the pegmatite as crystallization proceeded inward from the margins.

The layered sequence of mineral assemblages that developed in zoned pegmatites is the same in many places, so the astute prospector can use this knowledge in searching for mineral specimens. There are also "replacement bodies" in some pegmatites, where chemical reactions formed secondary minerals by the alteration and replacement of those which had crystallized earlier. A number of the rare and desirable pegmatite minerals occur in this environment. Cameron and others (1954) have described the zonation and other characteristics of New England pegmatites in great detail. Landes (1925) discussed the several generations of minerals in complex Maine pegmatites, especially at the Bennett Quarry in Buckfield.

The principal constituents of Maine pegmatites are the same minerals that form ordinary granite: quartz, feldspar, and mica. Concentrations of high-quality mica and feldspar have been discovered in many pegmatites, and these and other minerals have been exploited by means of open-pit quarries (Figure 5) and, less commonly, underground workings (Figure 6). Large, shiny fragments of pegmatite minerals often litter the roads leading to the quarries, and help point the way to collecting sites.

Quartz occurs in a variety of colors, but most of it is milky white to smoky gray or black. Rose quartz is found in some places, and Maine is one of the very few areas in the world where rose quartz crystals have been collected. Several species and varieties of feldspar and mica are present in the pegmatites. Most of the mica is either colorless to brownish muscovite (which was mined at numerous localities) or black biotite. Large flat sheets of biotite are especially common in pegmatites of the Topsham area. Lepidolite, a third mica species, often has an attractive lilac color. Mixtures of lepidolite with a platy white variety of albite feldspar (cleavelandite) may contain good specimens of colored tourmaline and other minerals.

Well-formed crystals of some pegmatite minerals may be tightly encased in the rock matrix. These include microcline feldspar, beryl, schorl (black tourmaline), almandine (garnet), and elbaite (pink, green, or blue tourmaline). The best crystals of these minerals tend to be surrounded by quartz which solidified around them. With care, the brittle quartz can be partly chipped away to expose a nice "matrix specimen." Such specimens are more interesting and valuable than crystals that have been totally detached from the host rock.



Figure 7. Large crystal of elbaite (tourmaline) collected at Mount Mica in 1904. This gemmy crystal was green in the upper part and pink to red at the base. *From Bastin (1911).*

Under favorable conditions, pegmatite minerals grew into open cavities in the rock ("pockets" or "vugs") where they tended to achieve greater clarity and perfection than other crystals of the same species that are embedded in the matrix (Figure 7). The better-known minerals that may be found in pegmatite crystal pockets include quartz (colorless, smoky, amethyst, or rose), colored tourmaline, beryl (golden and aquamarine), apatite, and topaz. In the famed tourmaline mines at Newry and Paris, Maine, cavities large enough for a person to crawl into have been opened (Figure 8). Geological disturbances have usually caused many

of the crystals to break loose from the walls, and they may now lie in a jumbled pile surrounded by clay on the cavity floor.

Minerals Found in Metamorphic Rocks

A lot of the bedrock in Maine is metamorphic rock, which formed by the recrystallization of older rocks (largely sedimentary and volcanic) that were buried and subjected to high temperatures and pressures deep in the Earth's crust. The degree of metamorphism is most intense in the southern part of the state, where there are large plutons of granite and other igneous rocks (Osberg and others, 1985). In northern Maine the bedrock is only slightly metamorphosed, and the original sedimentary layering is preserved.

Crystals of several mineral species may be found in metamorphic rocks, depending on the original composition of the parent rock and the physical and chemical conditions that prevailed during metamorphism. Marine muds that had previously hardened to form a sedimentary rock called shale were converted to mica-rich rocks such as slate and schist. Mica schist is coarser-grained than slate, and developed where metamorphism was great enough to cause considerable recrystallization. Schists locally contain crystals of dark-red almandine (garnet), white to blue kyanite, gray or pink andalusite, or brown staurolite. The Cook Road staurolite locality in Windham is an example of this kind of deposit. Schists tend to split more easily along directions in which the parallel mica flakes are aligned (planes of foliation). This property helps in breaking apart slabs of rock to expose the embedded crystals. The better crystals of minerals such as staurolite tend to be concentrated in layers in the schist.

Marble quarries are abundant in the Rockland-Thomaston, Rockport, and Union areas in Knox County. They once supported a booming industry based on the production of agricultural lime (Grindle, 1971), but most are now closed. One can locate the quarries by inquiring locally, and they are shown on maps by Morrill and Hinckley (1959) and Allen (1953). There is little published information on the mineral collecting potential of these marble quarries, but they have provided some good specimens of calcite crystals. Tremolite and other minerals also have been reported (Morrill and Hinckley, 1959).

In places where the original rock was an impure limestone, metamorphism produced a different assemblage of minerals. Among the more common minerals in this setting are orange grossular (a member of the garnet group), green diopside, and olive-brown vesuvianite. They usually occur as massive, interlocking grains that form a tough "calc-silicate" rock (also known as "lime-silicate" or "skarn"). Good crystals of these minerals formed in some cases, particularly where they are partly enclosed by calcite or quartz. Calcite has often been removed by weathering, or can be dissolved in acid to expose the crystals. Well-known localities for calc-silicate minerals include the Pitts-Tenney Quarry in Minot and the Sanford vesuvianite locality (Shaub, 1957; Leavitt, 1987; Leavitt and Leavitt, 1993). Like the occurrences in mica schist, most such localities are relatively small outcroppings or prospect pits. They are smaller than commercial pegmatite operations, having been worked only by



Figure 8. Loren Merrill at entrance to the largest pocket (20 x 12 x 7 ft) that he found at Mount Mica. *From Bastin (1911).*

mineral collectors. If you are looking for fine specimens, you should go prepared with heavy hammers, chisels, and other equipment needed for loosening and breaking large slabs of rock from the ledges.

Metal Sulfide Minerals

The sulfide minerals consist of various combinations of metals with the element sulfur. Sulfides of iron (pyrite, pyrrhotite), copper (chalcopyrite), zinc (sphalerite), and lead (galena) are common in Maine. These minerals are shiny and brittle, and they have a metallic luster on fresh surfaces. They generally occur in massive form, though pyrite ("fool's gold") is frequently crystallized.

The sulfides in Maine are found in several environments. They occur in metamorphosed sedimentary and volcanic rocks, veins along fault zones, and as sparsely disseminated grains in igneous rocks. Deposits of the above minerals have been mined in many places, notably in the belt of volcanic rocks in eastern coastal Maine. These mines are typically very small. Some of them were worked for the gold and silver that occur as minor impurities in the base-metal sulfides. There was a short-lived boom in the 1880's, which even resulted in publication of a weekly mining newspaper in Bangor (Figure 9), but low-grade ore and changing economic conditions soon forced the majority

of the mines to close. A few, such as the Harborside Mine in Brooksville, were occasionally worked until recent times. Intensive exploration activity occurred in the 1960's (Figure 10), and has persisted intermittently through the present day. Large copper and zinc sulfide deposits have been discovered in northern Maine, but have yet to be developed into mines.

The piles of waste rock around old mines are usually the best places to collect sulfide ores. Hussey and Austin (1958) and Morrill and Hinckley (1959) list the metal mines in Maine, and more detailed information can be obtained from publications such as those by Young (1962, 1963). Some detective work and local inquiries will help in finding localities that are small and overgrown. Watch out for mine shafts as you explore these areas. Rusty pieces of rock on the mine dumps are a guide to sulfide mineralization, and you generally can obtain fresh specimens by cracking open the dump material.

Other Mineral Occurrences in Bedrock

In addition to the types of mineral deposits described above, there are other, less common occurrences in Maine. Exploration of these localities offers the potential for discovering an assortment of interesting minerals. Several examples are briefly discussed here, but there are almost certainly others waiting to be found.

Maine Mining Journal.

DEVOTED TO THE MINING INTERESTS OF THE STATE OF MAINE.

[Entered as second-class mail matter.]

Vol. I. No. 10.

BANGOR, MAINE, MARCH 5, 1880.

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Figure 9. Front page of the Maine Mining Journal.



Figure 10. Sinking a shaft at the Black Hawk Mine in Blue Hill during the mid 1960's.
Maine Geological Survey file photo.

A number of minerals besides the metal sulfides may be disseminated through igneous rocks. An outstanding example is the Litchfield area, where there is a type of syenite rock known as "litchfieldite." It is curious that this relatively small body of rock is almost totally concealed beneath glacial sediments; its breadth has been determined chiefly from glacially transported boulders that are scattered about the countryside. Some of these boulders contain attractive patches of bright blue sodalite and yellow cancrinite. Zircon crystals up to 1 inch long are also embedded in the rock.

Granitic igneous rocks sometimes contain open fissures which are lined with crystals of quartz, feldspar, and perhaps other minerals. In spite of all the granite in Maine, these crystal pockets do not seem to be very large or abundant. They are much more prevalent in the younger Conway granite of neighboring New Hampshire (Samuelson and others, 1990). However, a few cavities containing crystals of smoky quartz have been found in the granite quarries of Hallowell and Stonington, and in road cuts.

Large pockets of quartz crystals may be encountered in fault zones and other structurally controlled cavities. One such pocket was discovered in a road cut along U.S. Route 2 in Mexico, Maine, and produced many pounds of doubly-terminated quartz crystals. Another road cut -- on U.S. Route 1 in Calais -- yielded

a rare find of sharp prehnite crystals on crusts of quartz crystals. In 1987, the excavation of a pit for road fill in Sweden, Maine, exposed fractured bedrock with cavities containing spectacular deep-purple amethyst crystals on a matrix of white quartz crystals (Thompson, 1990).

Basalt is a fine-grained, dark green to black igneous rock that outcrops in the coastal and northern Maine volcanic belts. These areas have not been thoroughly checked for mineral specimens, but some of the gas pockets that formed in the cooling volcanic magmas contain crystals of various minerals, as well as agate nodules. The outcrops at the Perry agate locality and other sea cliffs in the eastern part of the Maine coast belong to this category.

The mineralogy of northern Maine has generally been ignored because of its remote location and the appeal of the southern Maine pegmatites. It is likely that the adventurous collector could find some good specimens of minerals and fossils in Aroostook County and elsewhere in northern Maine. Most of the bedrock in this region consists of weakly metamorphosed sedimentary and volcanic rocks. There are lime quarries in the Aroostook County agricultural belt, where calcite crystals and other minerals may occur. Large deposits of unusual iron and manganese-rich bedrock have been discovered in several places (Miller, 1947). The manganese prospects on Maple and Hovey

Mountains (west of Bridgewater) contain an assortment of minerals, including braunite, hematite, magnetite, rhodochrosite, and rhodonite (Pavlides, 1962).

Alluvial and Beach Deposits

Alluvial mineral deposits, also known as placers, are those which occur in sand and gravel laid down by running water. "Alluvium" includes both modern stream sediments and those deposited during relatively recent geologic time (as opposed to the older, indurated sedimentary rocks). The alluvial deposits of most interest in Maine are the gold placers. Gold has been panned for many years from the Swift River in Byron, and from other lesser-known streams. It seems probable that gold could also be found in the older sand and gravel deposits left by glacial meltwater streams, but there are no published accounts of such discoveries in Maine.

Gravel beaches occur in many places along the Maine coast. They contain pebbles and cobbles that have been eroded from nearby bedrock or glacial sediments and rounded by tumbling in the surf zone. Beachcombing in these areas is a popular pastime. Good crystals rarely survive in the storm-ravaged environment of gravel beaches, but one may find brightly colored stones that are suitable for lapidary work and ornamental uses. Jasper Beach in Machiasport is a favorite collecting site, though the so-called "jasper" is actually a mottled reddish-brown volcanic rock. A variety of unusual beach cobbles can be collected at this and other localities in the granitic/volcanic terrain of eastern coastal Maine.

COLLECTING TIPS

When visiting a collecting site, it is important to be safety conscious and help insure the goodwill of the property owner. Care should be taken to avoid falling into pits and shafts, or loosening boulders that may tumble onto people downslope from you. If you dig a deep hole in a mine dump, watch out that it does not cave in on you. Where possible, permission of the landowner should be obtained before entering a property, and trash should be packed out. Following these basic guidelines will help keep the collecting locations open for yourself and others. This is particularly important as housing developments and concerns about liability continue to close sites in New England.

Equipment

A suitable assortment of tools is often essential for a successful mineral collecting trip. The minimum requirement is a good rock hammer, which can be purchased in hardware stores, mineral shops, or by mail. Better-grade hammers, such as those made by the Estwing Company, are preferred to the ones with wooden handles, since the heads tend to work loose on the latter type. A mason's hammer can be substituted if necessary. However, ordinary carpenters' hammers are too lightweight to effectively break rocks, and dangerous metal splinters may fly off the

brittle heads. The larger crack hammers and sledge hammers, as well as chisels, are useful where specimens have to be broken from ledges or boulders.

Many collecting sites are in old quarries, where there are dumps consisting of piles of waste rock discarded during mining operations. Mineral specimens may be found by digging through these dumps with a shovel. The small, folding Army-type shovel is good for this purpose, and potato diggers are also helpful. Some collectors sift or wash the finer rock debris with a screen, especially when looking for pieces of tourmaline or amethyst. Other important accessories include a magnifying glass for checking small specimens, safety goggles or glasses for eye protection, and a knapsack with plenty of newspaper or other wrapping materials for transporting specimens. Industrious collectors may want to bring along wrecking bars, crowbars, jacks, and other heavy-duty equipment for moving boulders on mine dumps. The size of your tool kit will be determined partly by the walking distance to the locality, keeping in mind the additional weight of specimens on the return trip.

In addition to tools for collecting minerals, you will need food, drink, and other comfort items, especially for hikes to remote locations. Gloves are essential to help protect your hands from blisters and being cut by sharp quartz fragments, while band-aids and insect repellent may also be needed. Cameras are often overlooked when preparing for trips, but are vital for documenting mineral discoveries. Photos and videotapes may be used for giving talks or simply recalling details of past trips. In a few areas, it helps to bring a compass and pace counter (to keep track of how far you have walked) for navigating through the woods. Bright orange flagging tape is a handy trail marker when you want to relocate obscure localities.

Techniques

Much could be written about the techniques of collecting minerals. An excellent book on this topic is *Field Collecting Gemstones and Minerals*, by Sinkankas (1988). This book covers all aspects of the subject, from the prospecting stage to cleaning, cataloging, and storing your specimens at home. Experience in the field will soon refine your collecting methods. At mines and quarries, most people choose to explore mine dumps rather than work the solid ledges. First scan the ground surface for anything special that may have been washed clean by the last rain. You may find satisfactory specimens right on top of the ground, but most of the better material will have been picked up by previous visitors. At pegmatite localities, look for fragments of beryl, lepidolite, or other signs of desirable mineralization when selecting a place to dig. A part of the dump that has not been dug over many times is likely to be more productive. This will sometimes be an area covered with bushes or small trees, necessitating the use of a saw or brush cutter where permissible.

When digging in mine dumps, it will be easier to throw away the worthless rock and deepen your excavation if you begin on a sloping part of the dump surface. The rock debris often comes out dirty and must be carefully examined to spot crystals and other good specimens. If the dump material cannot be washed

or screened, it will help to rake through it more than once before discarding. The collecting may get better or worse as you dig deeper, depending on where in the mine the debris was coming from as the dump was originally accumulated. If you find the better material to be concentrated in certain levels of the dump, this knowledge can guide further exploration.

You will probably want to reduce the size and weight of many specimens that you collect by removing excess matrix (host rock) surrounding the desired mineral. Trimming can also improve the balance of a specimen and make it easier to display in an attractive position. This procedure should be done very cautiously to avoid breaking crystals or popping them off the matrix. It will be most successful if there are favorably located fractures in the rock along which it will easily split, using a hammer and chisel. Best results are often obtained by placing the specimen on the ground to cushion the impact, and using the minimum required force. In extreme cases, trimming may need to be done at home with special equipment. Mistakes will inevitably be made, especially through the temptation to trim a piece more than it can withstand, but your skill will improve with practice.

Most mineral specimens, particularly those which are crystallized, should be carefully packed for the trip home. This can be done by wrapping them in layers of newspaper and snugly fitting them into a knapsack or other container. Sharp edges or corners on the matrix parts of specimens may need to be blunted with gentle hammer taps to prevent them from slicing through wrapping materials and damaging surrounding objects. Special care is advised for the packing of delicate specimens. Use soft wrapping materials, loosely wadded around fragile or projecting crystals, and place them on top of the container. Egg boxes, film canisters, and the like are useful for sorting and packing the smallest specimens.

A well-labeled mineral is always more interesting and valuable to yourself and others. While you are still in the field, or soon after returning home, specimens ought to be labeled as to when and where they were collected. This information may be surprisingly hard to remember at a later date, especially after trips to other localities that produce similar minerals.

You can clean most minerals found in Maine with soap and water, using a stiff brush to remove clinging dirt. Collectors use ultrasonic cleaners, acid baths, and many other methods for removing tenacious coatings such as rust stains. Some of these methods are potentially dangerous and must be learned with the help of reference books or experienced persons. The techniques for cleaning and cataloging minerals are beyond the scope of this guidebook, but Sinkankas (1988) and other authors discuss these subjects.

Collecting in the White Mountain National Forest

Several localities in this guidebook are situated on White Mountain National Forest (WMNF) property in western Maine. Visitors should be aware that sites in the WMNF are only open for noncommercial (hobby) collecting, which is limited to use of hand tools. Vehicles are not allowed on quarry access trails that

lie within the WMNF. Mining and commercial mineral collecting on National Forest lands in general are under the jurisdiction of the U. S. Bureau of Land Management. As of 1997, a weekly or annual "passport" must be displayed on your vehicle while parked in the WMNF for mineral collecting or other recreational purposes. Questions regarding these regulations should be directed to: Androscoggin Ranger District, WMNF, 300 Glen Rd., Gorham, NH 03581. Phone: (603) 466-2713.

SOURCES OF ADDITIONAL INFORMATION

Reference books and magazines are valuable sources of information in planning mineral collecting trips and identifying the material that you bring home. Most bookstores carry guidebooks for identifying rocks and minerals and learning about geology. The books that are most useful to you will depend on your level of experience, and can be determined by inspection or the recommendations of other hobbyists. Some consist mostly of colorful photographs of superbly crystallized minerals; these are impressive coffee table books, but may contain little practical information for the novice collector. Standard reference books, such as those by Pough (1996) and Prinz and others (1978), combine clear illustrations with useful advice for mineral identification.

Several hobby magazines are published for mineral collectors. They contain information on both old and new localities which is helpful in planning field trips. Educational articles, advertisements for specimens and equipment, and notices of forthcoming mineral shows also appear in these publications. Some magazines cater to lapidary interests, while others emphasize the collecting of mineral specimens. *Rocks and Minerals* is one of the leading magazines in the latter category; *Mineralogical Record* is another high-quality journal, with particular appeal to intermediate and advanced collectors.

Information about specific localities can be obtained by visiting libraries and searching through old books, government reports, and scientific journals. Many such references are included in our locality descriptions and the reference list at the end of this book; and King and Foord (1994) have compiled an extensive list of Maine mineralogical literature. Though most early references are out-of-print, the collector who takes the time to locate them will often find interesting historical data and clues to little-known mineral deposits. Useful articles on collecting sites in Maine formerly were published in the annual yearbooks of the Oxford County Mineral and Gem Association. These yearbooks are now difficult to find, but many of their best articles were reprinted in the Association's 40th anniversary volume (Putnam and Spencer, 1988).

Two of the best ways of learning to identify minerals are to visit museums and colleges where they are exhibited, and to seek the advice of experienced collectors. Mineral clubs have been formed in most regions of the country; their activities include educational programs and field trips. Members of these clubs are usually glad to share their knowledge with beginners. You can find clubs in your area by inquiring at gem and mineral shows. Shows also provide opportunities to see fine mineral

exhibits and purchase or exchange specimens. Another good way to learn about Maine minerals is to attend the annual Maine Mineral Symposium, which is usually held in Augusta, Maine, during a weekend in early May. Further details on the Symposium are included with the Maine mineral club listings at the end of this chapter.

Many of the best Maine minerals are exhibited in major museums, such as those at Harvard University and the Smithsonian Institution. There are some smaller mineral displays within the state of Maine that are accessible to the public. These are listed below.

Mineral Shows

Maine Mineral Symposium

Contact: Robert Hinkley
*Rte. 115, Yarmouth Rd.
Gray, Me 04039*

Phone: (207) 657-3732

(Education program held in Augusta in early May. Includes speakers, exhibits, dealers, and field trips.)

Maine Mineral Displays

L. C. Bates Museum

*U. S. Route 201
Hinckley, Maine 04944
Phone: 207-453-4894
(open by appointment)*

Colby College - Geology Department

*Waterville, Maine
(hallway exhibits; can be viewed when building is open)*

MacDonald's Mineral Museum

*34 Moody Street
Saco, Maine 04072
Phone: 207-284-4633
(open by appointment with Mrs. F. MacDonald)*

Maine Geological Survey

*Natural Resources Information and Mapping Center
Department of Conservation
Ray Building, Hospital Street (Rte. 9)
Augusta, Maine 04333
Phone: 207-287-2801*

Web page: <http://www.state.me.us/doc/nrimc/nrimc.htm>
(The Survey has an exhibit of Maine minerals, sells topographic and geologic maps and reports, and is an affiliate of the federal Earth Science Information Center; open to individuals or small groups during normal office hours: Monday through Friday, 8:00 to 5:00)

Maine State Museum

*Augusta, Maine
Phone: 207-287-2301
(gem and mineral exhibit includes superb tourmalines; hours are Monday through Friday, 9:00 to 5:00, Saturday, 10:00 to 4:00, and Sunday, 1:00 to 4:00, including some holidays)*

Mt. Mann Mineral Museum

*57 Main St.
Bethel, ME 04217
Phone: 207-824-3030*

(display of Maine minerals and gems; hours are Monday through Friday, 9:00 to 5:00, Saturday, 10:00 to 5:00, and Sunday by chance or appointment)

Nylander Museum

*393 Main Street
Caribou, Maine 04736
Phone: 207-493-4474
(displays of minerals and fossils; open Memorial Day through Labor Day, Wednesday through Sunday, 1:00 to 5:00; other times and tours by appointment)*

Perham's of West Paris

*Route 1, Box 1890
West Paris, Maine 04289
(jct. of Rtes. 26 and 219)
Phone: 207-674-2341
(private museum open during store hours: seven days a week, 9:00 to 5:00)*

Maine Mineral Clubs

Federation of Maine Mineral and Gem Clubs

Contact: Noel Brown
*37 Mayflower Rd.
Augusta, ME 04330
Phone: (207) 622-1781*

Downeast Gem and Mineral Club

Contact: Harland Carr
Phone: (207) 276-5598

Eastern Maine Rockhounds

Contact: Rick Coweles
Phone: (207) 338-5894

Kennebec Rocks and Minerals Club

Contact: Scott Davidson
*44 Tillson Rd.
Monmouth, Maine 04259
Phone: (207) 933-3517*

Lincoln County Gem and Mineral Society

Contact: Marcy Walton
57 Windsor St.
Randolph, Maine 04346
Phone: (207) 582-6153

Maine Mineralogical and Geological Society

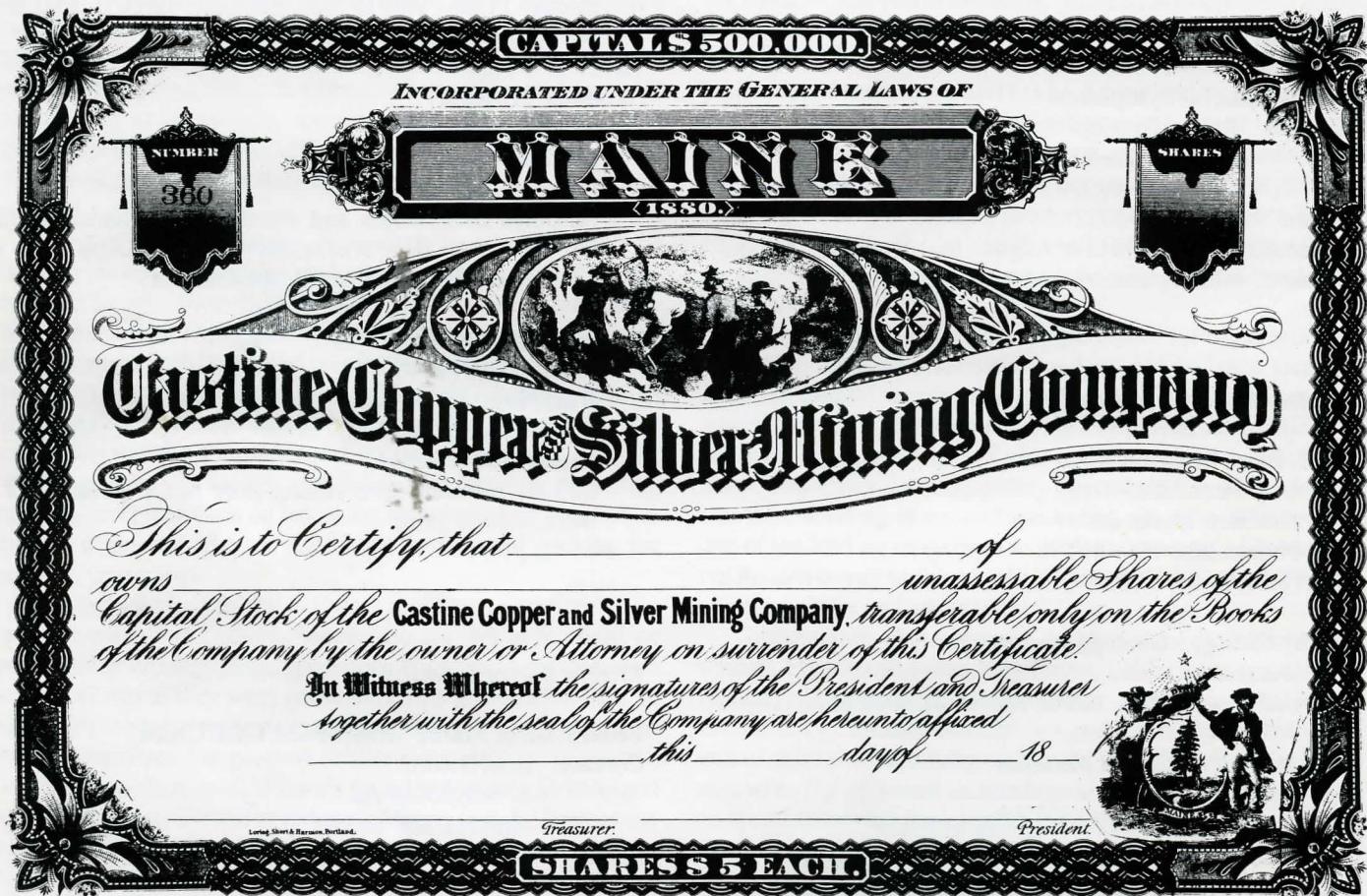
Contact: Les Myers
157 Falmouth St.
Portland, Maine 04102
Phone: (207) 773-1910

Oxford County Mineral and Gem Association

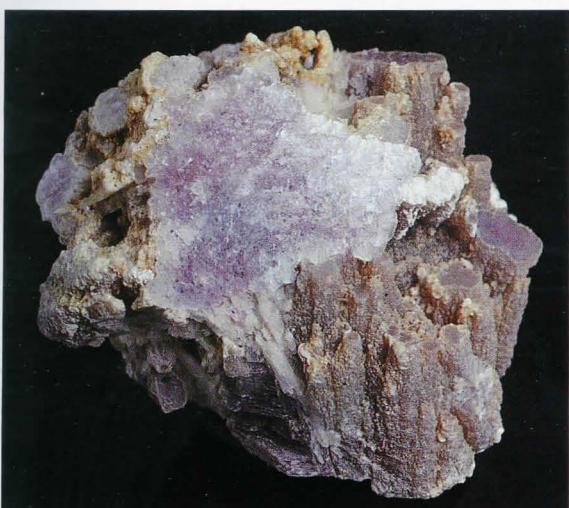
Contact: Eugene Tanguay
R.R. 1, Box 637
Bethel, Maine 04217
Phone: (207) 824-3611

Water-Oak Gem and Mineral Society

Contact: William Longley
P.O. Box 565
Waterville, Maine 04903
Phone: (207) 873-4863



The most notorious development in Maine's mining history was the metal mining boom of 1879 to 1882. The origin of this boom is unclear, though it is said that men returning from the gold rushes in the West found a similarity between the metal-bearing rocks of Maine and ore deposits of the western states (Perkins, 1941). There was great excitement as mining companies were organized, buildings were erected, expensive machinery was installed, and in some cases mills, concentrators, and smelters were constructed. The stock certificate shown above dates from the period of this mining boom.



Lepidolite crystals mined at Bennett Quarry in 1989. Maine Geological Survey specimen. *Photo by John B. Poisson.*



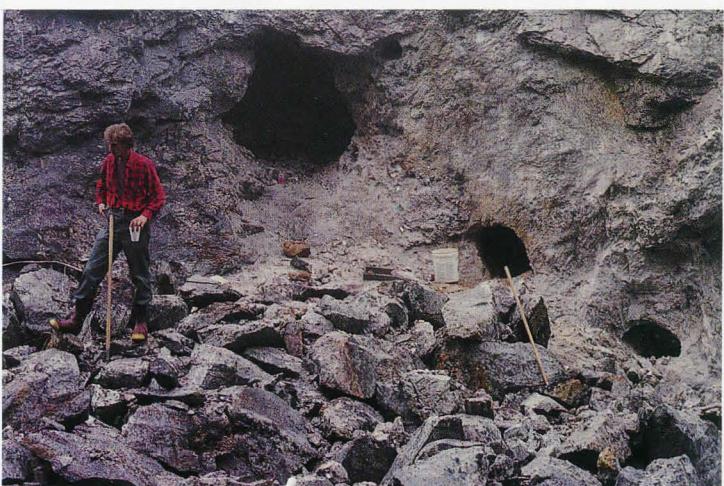
"The Peach," a well-formed 7-cm wide crystal of morganite (beryl) found during the 1989 mining operation by Sugar Hill Minerals. Harvard University specimen. *Photo by Gary Hoyle.*

BENNETT QUARRY
Buckfield, Oxford
County

""The Rose of Maine," an exceptionally large 30-cm wide crystal of gem-quality morganite beryl, in the pocket where it was discovered by Ronald and Dennis Holden of Sugar Hill Minerals, October 7, 1989. *Photo by Wayne Flanders,*



The Rose of Maine soon after removal from the quarry. Original orange color (revealed here by flashlight) changed to pink following exposure to sunlight. *Photo by Gary Hoyle.*



Dennis Holden next to freshly opened crystal pockets in north wall of quarry, 1990. *Photo by Woodrow B. Thompson.*



Quarry face at Black Mountain, showing masses of purple lepidolite, dark-colored crystals of tourmaline (center), and white spodumene crystals. *Photo by Woodrow B. Thompson.*



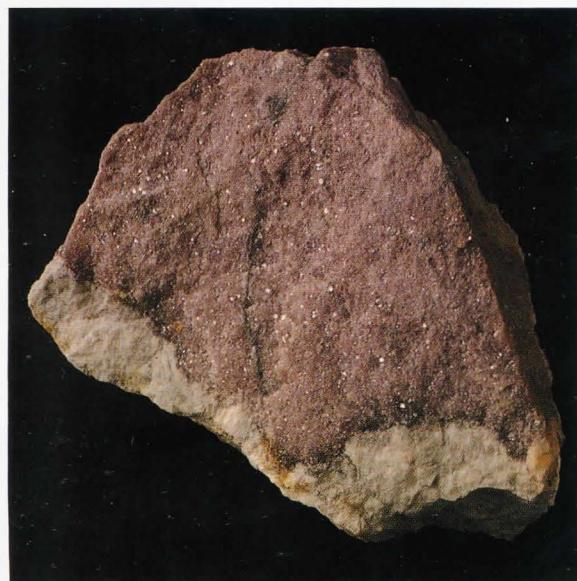
Elbaite (tourmaline) with lepidolite. *Photo by John B. Poisson.*

BLACK MOUNTAIN QUARRY

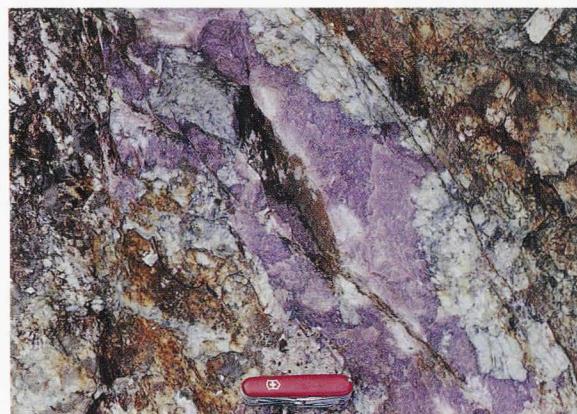
Rumford, Oxford County



Brown eosphorite crystals lining a cavity in cleavelandite feldspar. Harvard University specimen H117004. *Photo courtesy of Harvard University.*



Fine-grained lepidolite mica from the Black Mountain Quarry. Specimen is 10 cm wide. *Photo by John B. Poisson.*



Lepidolite exposed in quarry face, 1991. *Photo by Woodrow B. Thompson.*

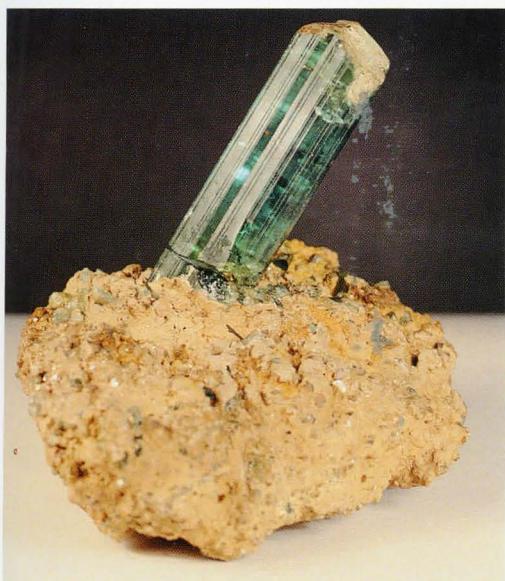


MOUNT MICA

QUARRY

Paris, Oxford County

Left: Reopening of the Mount Mica Quarry by Plumbago Mining Corporation, 1990. Photo by Woodrow B. Thompson.



Right: Elbaite (tourmaline) crystal mined at Mount Mica in 1979. Crystal is 9.5 cm tall. Harvard University specimen H117485. Photo courtesy of Harvard University.

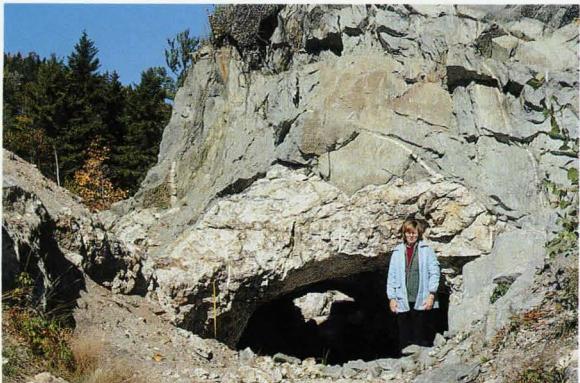


Left: Elbaite crystal on matrix. Harvard University specimen H88251. Photo courtesy of Harvard University.



Right: Drilling in southwest end of Mount Mica Quarry, 1990. Photo by Woodrow B. Thompson.

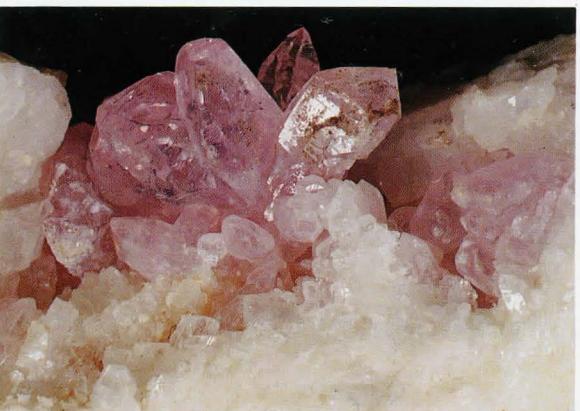
**NEWRY QUARRIES, Newry,
Oxford County**



Entrance to Plumbago Mining Corporation workings at the Dunton Quarry, where a series of large gem tourmaline pockets was discovered in 1972. Note contact (center) between pegmatite and overlying schist. *Photo by Woodrow B. Thompson, 1975.*



Elbaite (tourmaline) crystal from the Dunton Quarry. Harvard University specimen H110182. *Photo courtesy of Harvard University.*



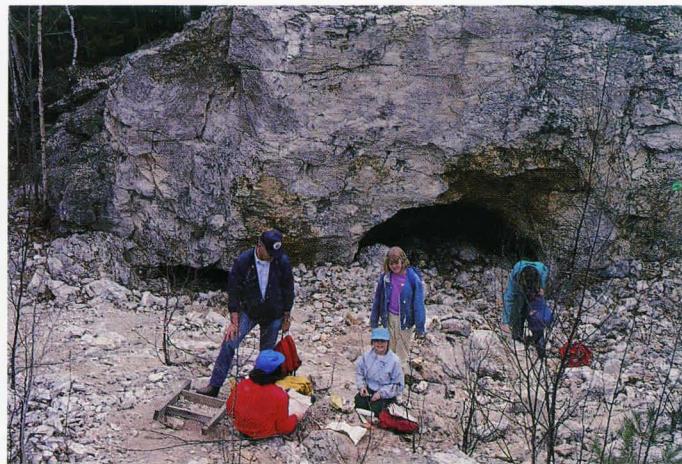
Rose quartz crystals on albite, from locality on Plumbago Mountain. *Photo by Vandall T. King.*



One of the largest tourmaline crystals found at the Dunton Quarry by the Plumbago Mining Corporation. Scale bar is one inch long. *Photo by Rock Currier.*



Sorting tourmaline crystals at the Dunton Quarry during the 1972-1973 operation by Plumbago Mining Corporation. Note the large crystals on rock in foreground. *Photo courtesy of Phillip McCrillis.*



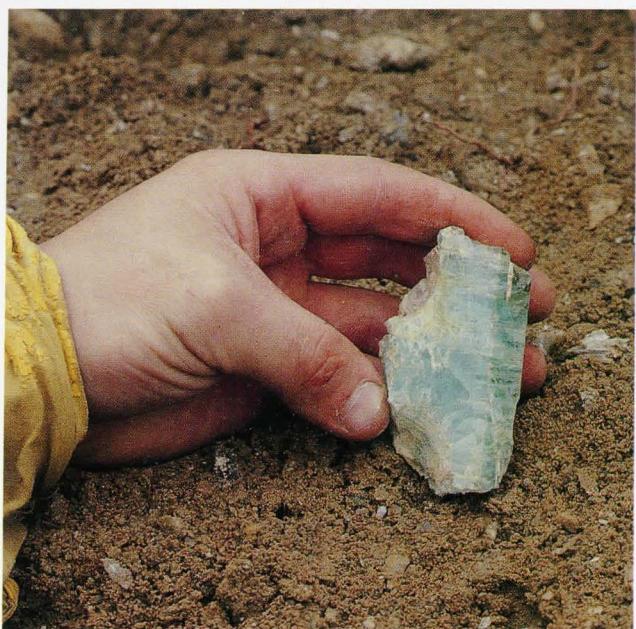
Above: The Lord Hill Quarry in Stoneham (White Mountain National Forest) is a favorite location for family outings. *Photo by Woodrow B. Thompson.*

Left: Topaz crystal from Lord Hill Quarry, Stoneham. Harvard University specimen H108799. *Photo by Vandall T. King.*



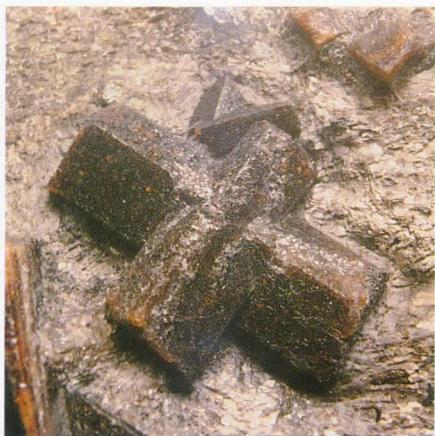
Above: Irving Groves (left) and Phillip McCrillis of Plumbago Mining Corporation opening amethyst vein at the Saltman Prospect in Sweden, 1989. *Photo by Woodrow B. Thompson.*

Left: Amethyst crystals from the Saltman Prospect, Sweden, Maine. Maine Geological Survey specimen. *Photo by John B. Poisson.*

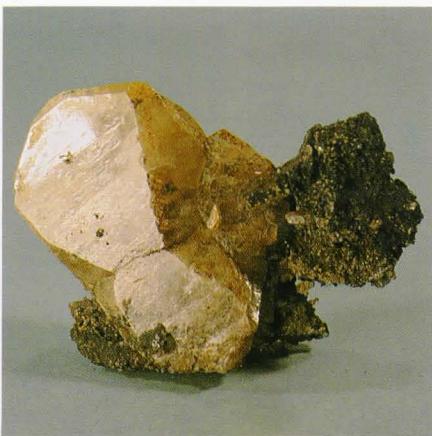


Above: Pit at the Aldrich Quarry in Stoneham. *Photo by Woodrow B. Thompson.*

Left: Beryl crystal found at the Aldrich Quarry, Stoneham. *Photo by Woodrow B. Thompson.*



Staurolite crystals in schist, Cook Road locality, Windham. Photo by Vandall T. King.



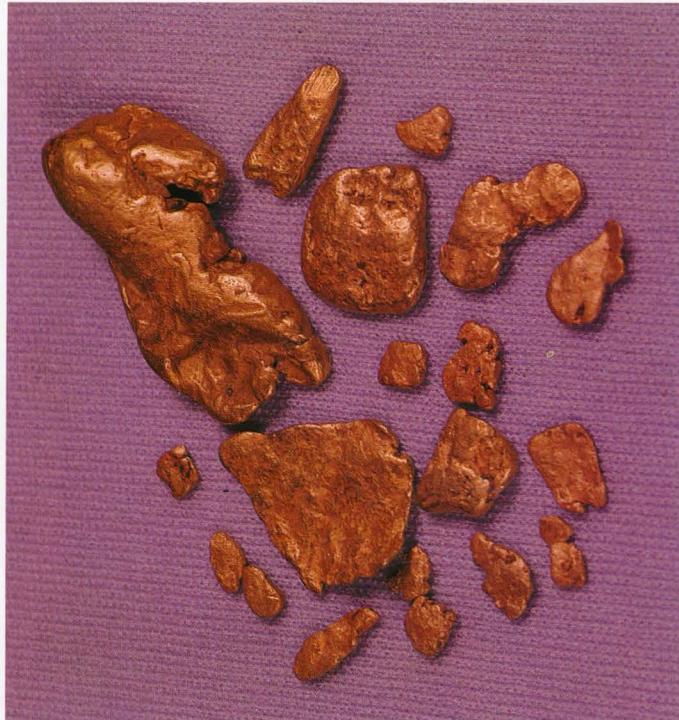
Hydroxyl-herderite crystals, Waisanen Quarry, Greenwood. Harvard University specimen H108610. Photo by Vandall T. King.



Almandine (garnet) and schorl (tourmaline) crystals in pegmatite, Porcupine Hill Quarry, Topsham. Harvard University specimen H126493. Photo by Vandall T. King.



Fluorapatite crystal, Pulsifer Quarry, Auburn. Harvard University specimen H108943. Photo by Vandall T. King.



Gold nuggets from the Swift River, Byron. Nugget in upper left (18.5 grams) is one of the largest known from Maine. Photo by Greg Hart, Maine State Museum.



Aquamarine beryl crystal, Topsham. Scale bar is one inch long. Harvard University specimen H88282. Photo by Rock Currier.



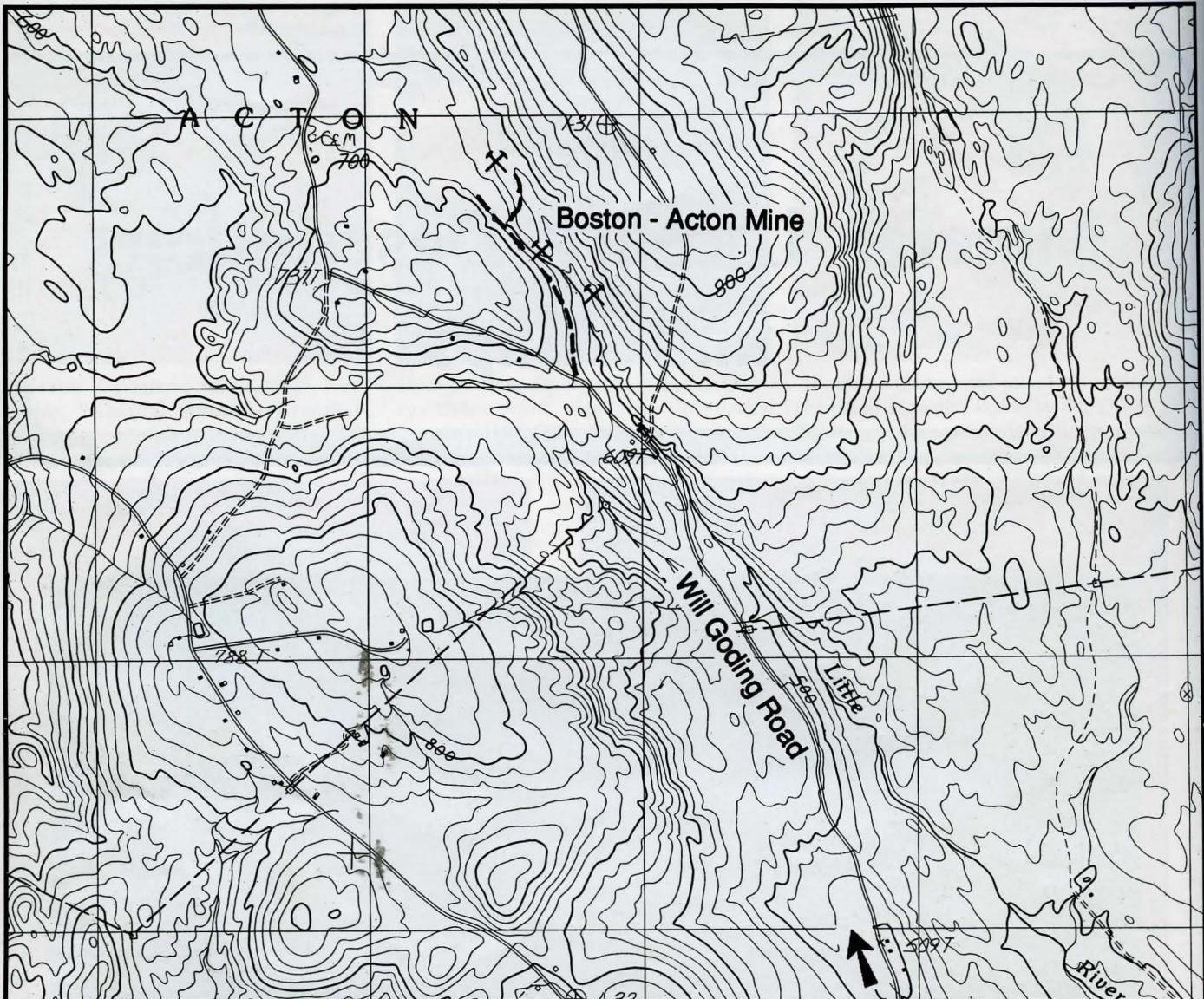
Etched topaz crystal, Fisher Quarry, Topsham. Harvard University specimen H97137. Photo courtesy of Harvard University.

Chapter 3

Mineral Locality Descriptions and Maps



Entrance to the Nevel Quarry in Newry, circa 1964. Also known as the "Twin Tunnels" quarry, this pegmatite locality has produced large crystals of spodumene, columbite, and other minerals of interest to collectors (see p. 51 for description). *Photo courtesy of Maine Department of Inland Fisheries and Wildlife.*

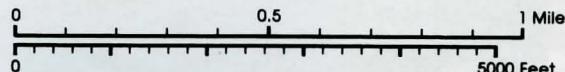


Locality #1: Acton Silver Mines

Town: Acton, York County

Base map: Milton 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Metal-sulfide ore deposits.

Collecting status: There are several mines on various properties. Inquire locally.

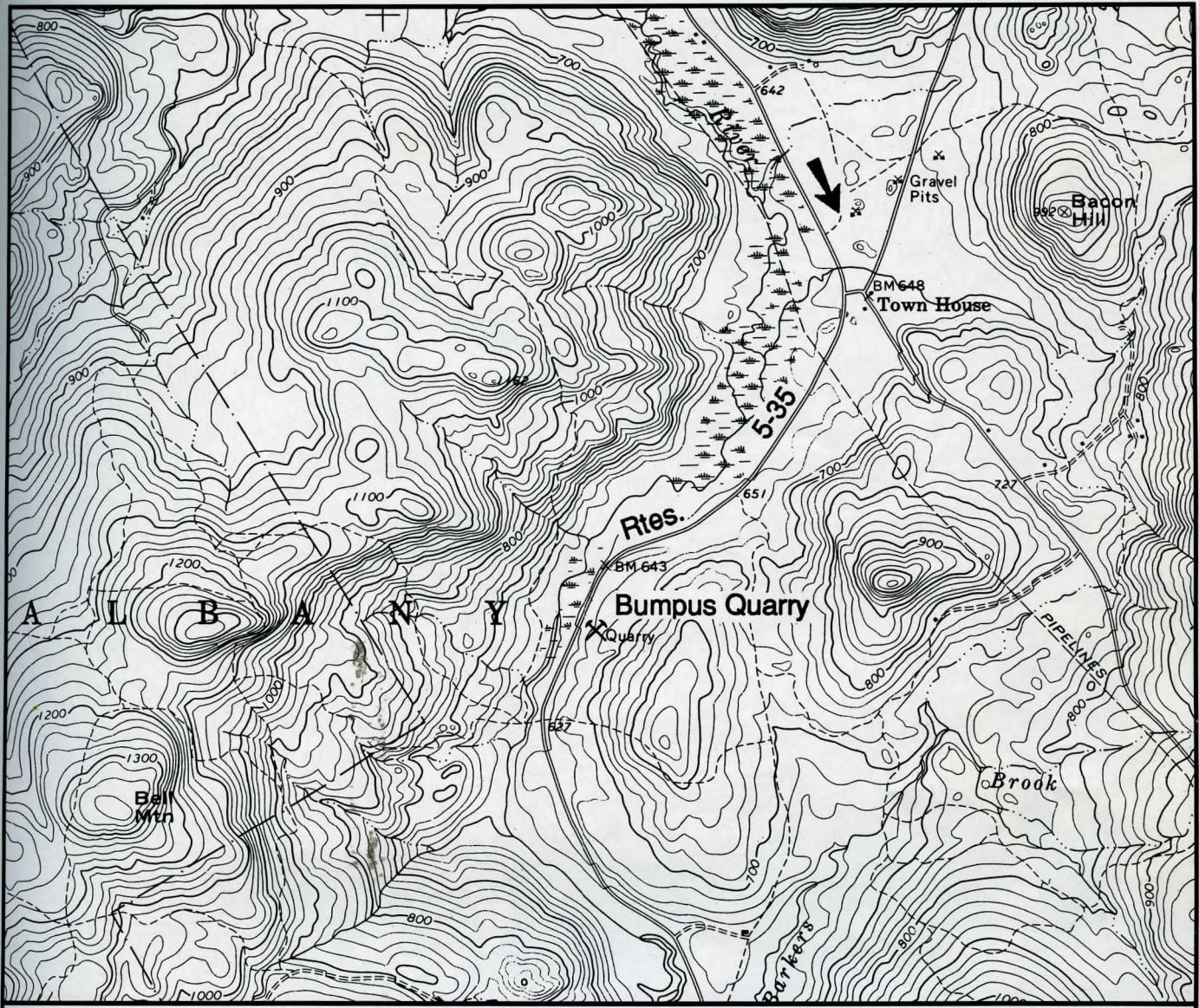
Minerals observed: acanthite(?), andalusite, arsenopyrite, bornite, chalcopyrite, galena, goethite, gold, pyrite, pyrrhotite, quartz, silver, sphalerite.

Comments: A compass and insect repellent (May-Sept.) may be useful here. Watch out for vertical mine shafts.

Directions: *Driving:* From Sanford, take U.S. Rte. 202 south to blinking light in East Lebanon. Turn right and go north 2.55

miles (keeping to right and then to left as you pass through North Lebanon). Turn right onto Will Goding Road and continue north 2.50 miles (pavement ends at 1.10 miles). Park at head of trail on right side of road.

Walking: Follow trail north 1,400 feet to fork. Take trail to right and continue about 100 feet to old bridge with beaver dam and pond on left. This is head of Little River. Proceed on faint trail (which will turn north) 900 feet to old mine and shaft on left. Alternatively, from old bridge walk south along east bank of Little River (no trail) for about 450 feet to the Boston-Acton and other mines.

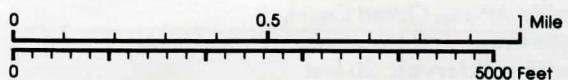


Locality #2: Bumpus Quarry

Town: Albany, Oxford County

Base map: East Stoneham 7.5' quadrangle

Contour interval: 20 feet



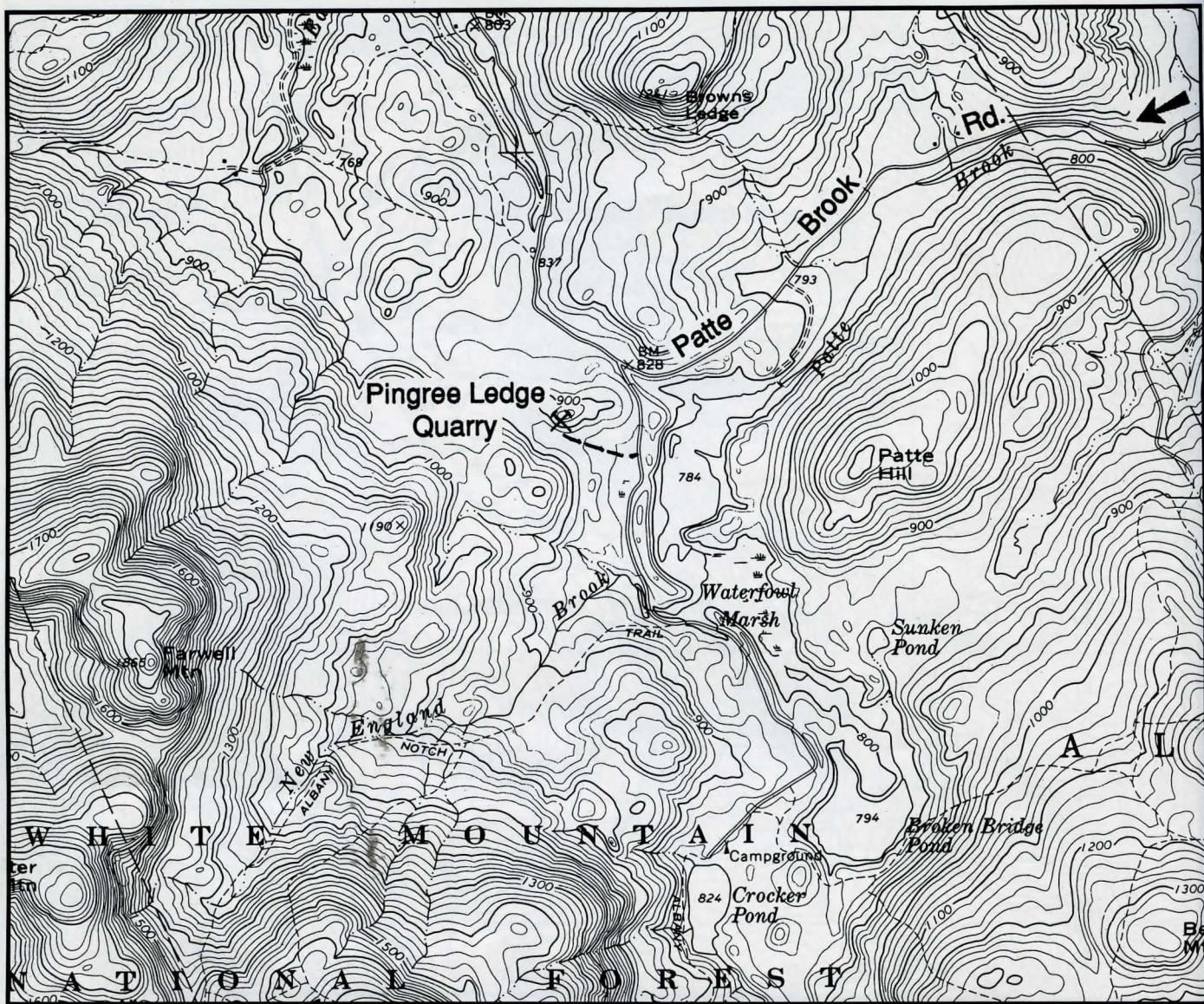
Type of deposit: Granite pegmatite.

Collecting status: Open for collecting on fee basis. Visitors must contact Rodney Kimball, Box 6, West Bethel, Maine 04217 (207-836-3945). Mr. Kimball has a shop on U.S. Rte. 2 in West Bethel.

Minerals observed: albite (including var. cleavelandite), almandine (garnet), autunite/meta-autunite, bertrandite, beryl (aquamarine, golden), biotite, columbite, cookeite(?), euclase(?), fluorapatite, hydroxyl-herderite, microcline, muscovite, quartz (milky, rose, smoky), schorl (tourmaline), torbernite/metatorbernite, uraninite, zircon.

Comments: The Bumpus Quarry has produced some of the largest known beryl crystals from Maine (see Figure 4, p. 5). According to a reliable source (Neumann, 1952), the biggest crystal found here was extracted in 1949. It was 27 feet long, tapered from 4.5 feet wide at one end to only 9 inches at the other, and yielded 26 tons of beryl! Golden beryl crystals and large quantities of rose quartz have also been collected at the Bumpus Quarry.

Directions: Driving: From jct. of U.S. Rte. 2 and Rte. 5 in Bethel, drive south on Rte. 5 for 7.75 miles. Park on right, across road from mine. Quarry dumps are visible on east side of road.

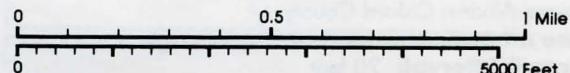


Locality #3: Pingree Ledge Quarry

Town: Albany, Oxford County

Base map: East Stoneham 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Located in the White Mountain National Forest. No permission is needed to collect minerals here. However, collecting must be noncommercial, done with hand tools, and not greatly disturb the mine area.

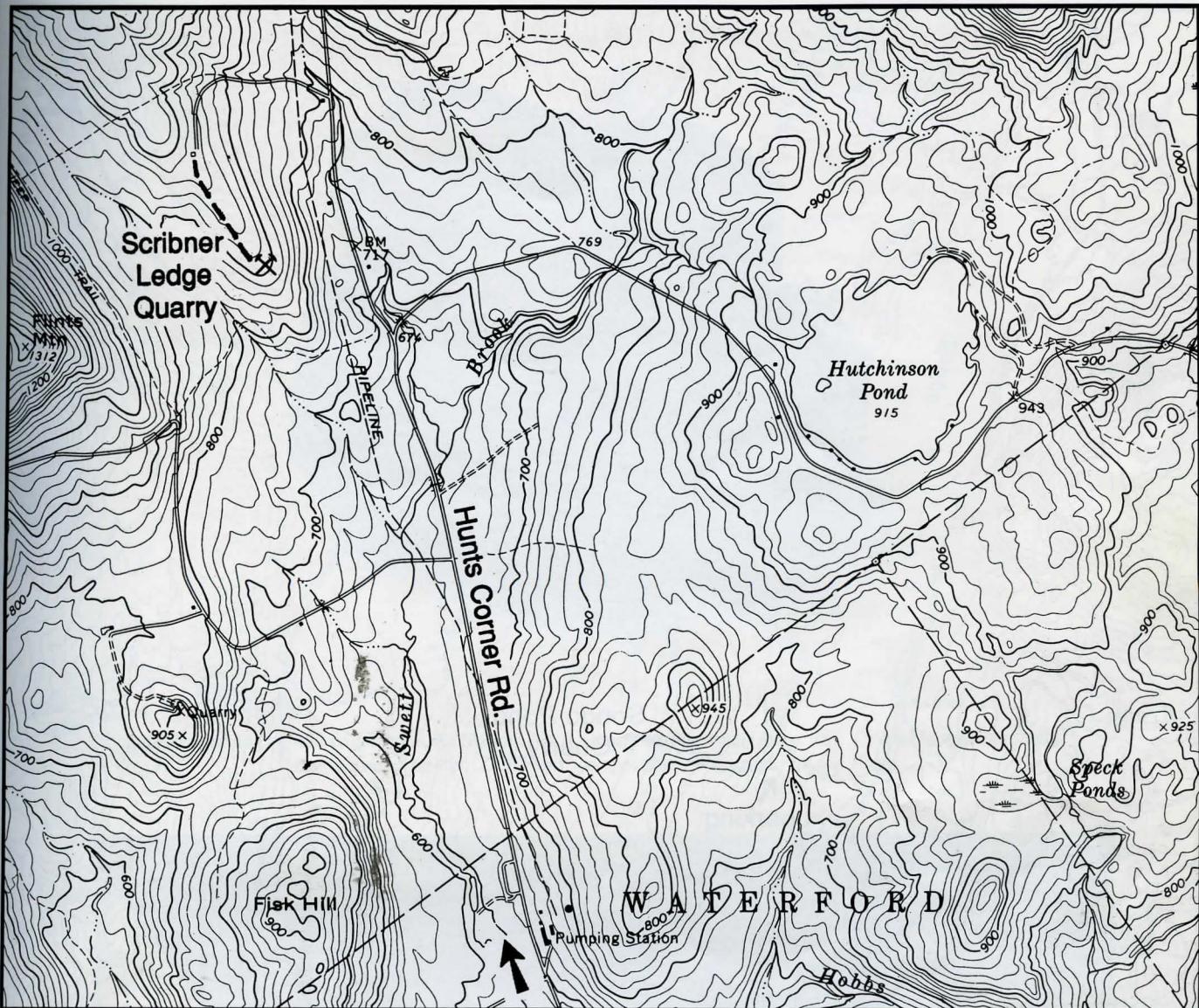
Minerals observed: albite, almandine (garnet), bertrandite, beryl (green, golden, etched), biotite, columbite, fluorapatite (colorless, gray, green, purple), fluorite, microcline, muscovite, quartz (colorless, milky, smoky crystals), schorl (tourmaline).

Comments: This property was part of the C. P. Pingree farm when it was first worked for mica in 1878-79 (Bastin, 1911). A variety of interesting quartz crystals can be found in the dumps, including some which are doubly terminated, sceptered, and contain liquid inclusions with bubbles. There are also nicely

terminated schorl crystals, and small lavender fluorapatites. Pingree Ledge is noted for bertrandite crystals, and good beryl crystals have been found here (N. Wintringham, personal communication).

Directions: *Driving:* From jct. of Rtes. 5 and 35 in Lynchville, drive north on combined Rtes. 5-35 for 8.05 miles. Turn left onto Patte Brook Road (no sign) and drive generally southwest for 2.90 miles, keeping straight at intersections. Take sharp left turn onto Crocker Pond campground road, and drive south 0.20 mile. Park at entrance to old woods road on right.

Walking: Walk generally west-northwest for 585 feet (195 paces) to fork in woods road (note pile of bricks and stones to right of fork). Keep right at fork and continue 420 feet (140 paces) west-northwest to the quarry, which is located on the south face of a hill.

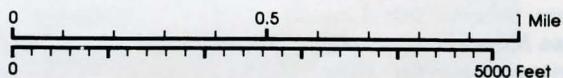


Locality #4: Scribner Ledge Quarry

Town: Albany, Oxford County

Base map: Greenwood 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

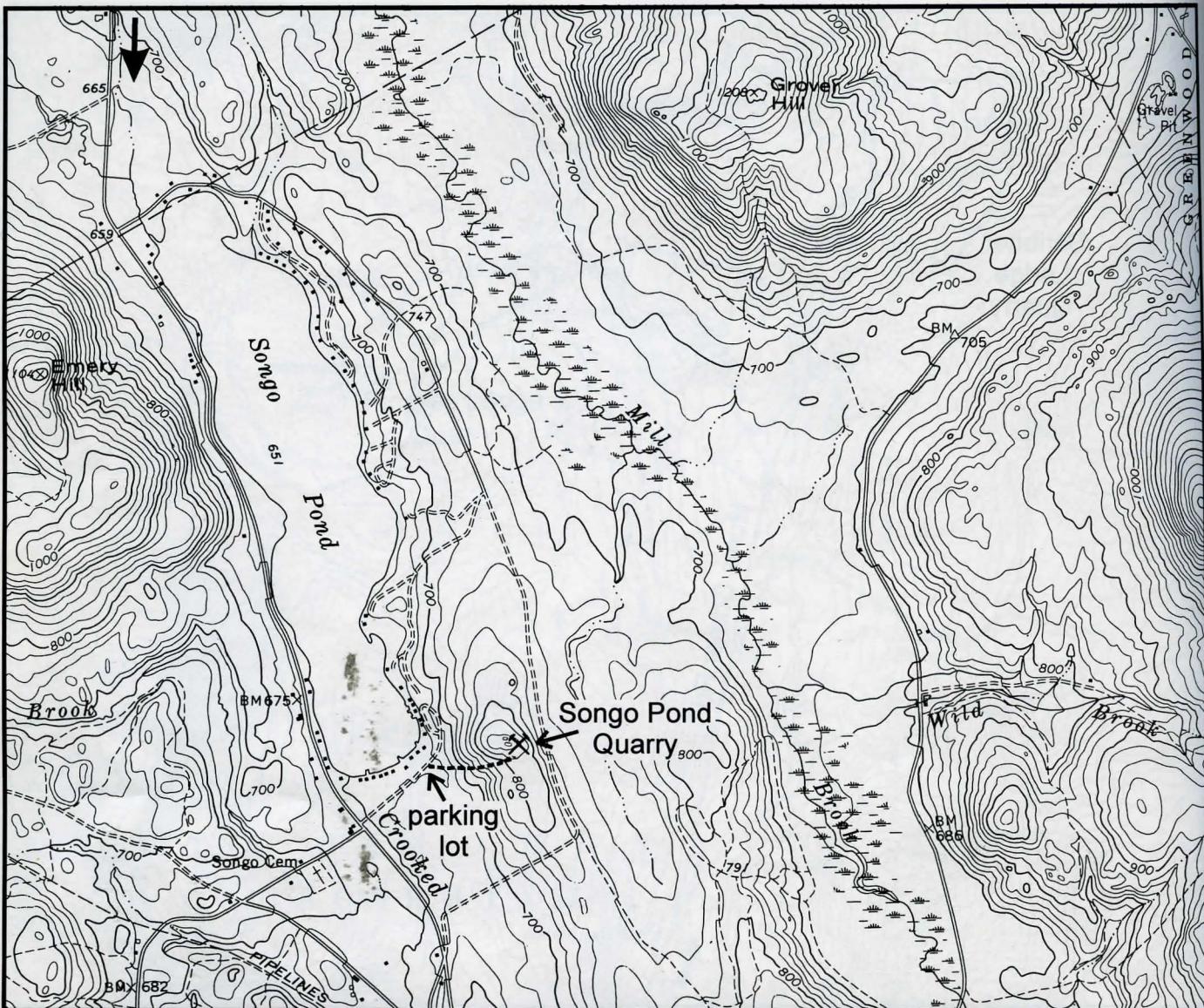
Comments: Many fine beryl crystals and asteriated rose quartz have been found here.

Collecting status: Quarry has usually been open for collecting, but may be closed from time to time. Visitors must first obtain permission from Mark Stearns, whose residence is located on road to quarry, and pay a collecting fee of \$5.00.

Directions: Driving: From jct. of Rtes. 117 and 118 (west of Norway village), drive 7.50 miles west on Rte. 118. Turn right onto Hunts Corner Road and drive north for 4.20 miles. Turn left onto gravel road and go 0.35 mile uphill to the Stearns residence. Obtain permission and park here. (Vehicles may continue if road is dry.)

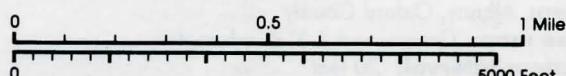
Minerals observed: albite, almandine (garnet), autunite, beryl (green, yellow), biotite, columbite, fluorapatite, microcline, muscovite, quartz (milky, rose, smoky), schorl (tourmaline), uraninite, uranophane.

Walking: Walk or drive about 1800 feet (600 paces) south-southeast on farm road leading through orchard to quarry. Small prospect pit is passed on left just before reaching main quarry.



Locality #5: Songo Pond Quarry

Town: Albany, Oxford County
Base Map: East Stoneham 7.5' quadrangle
Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Open for collecting on fee basis. For information, contact Jan Brownstein, P.O. Box 864, Bethel, Maine 04217 (207-824-3898).

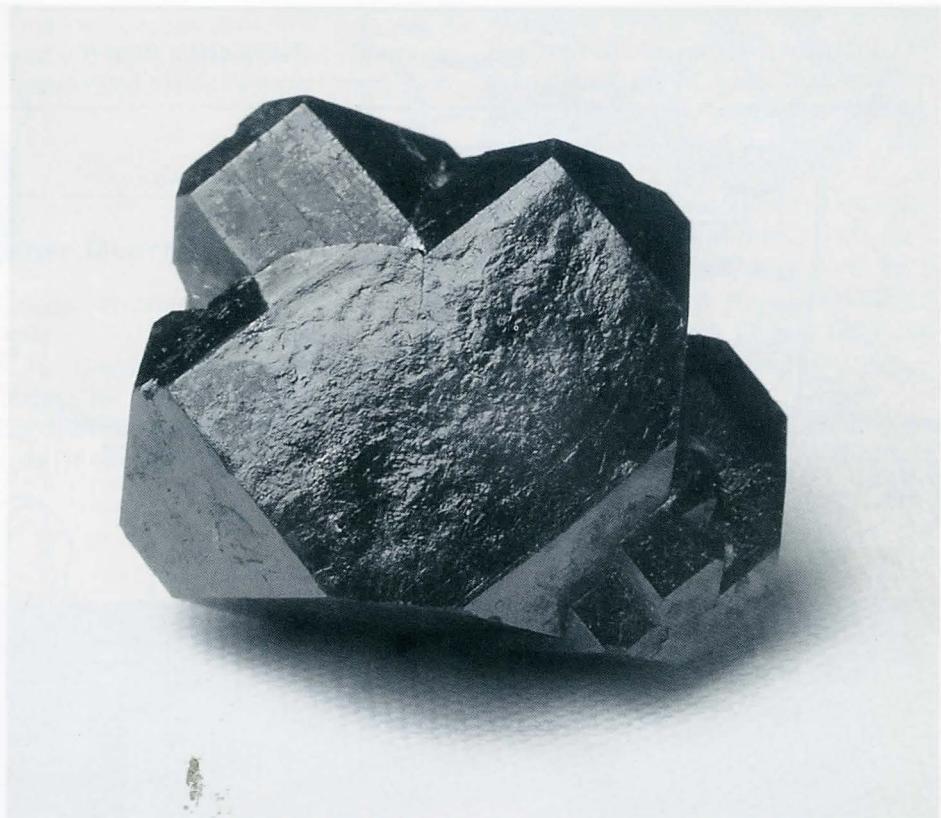
Minerals observed: albite, almandine (garnet), bertrandite, beryl (aquamarine), biotite, columbite, fluorapatite, hydroxyl-herderite, microcline, muscovite, opal (var. hyalite), pyrite, quartz (milky, smoky), rutile, schorl (tourmaline), siderite, uraninite.

Comments: The Songo Pond Quarry is well known for producing aquamarine beryl crystals of very fine deep-blue color.

Also known as Kimballs Ledge, this quarry has been worked by several people over the years. Ongoing excavations have exposed fresh material and give visitors a chance to see how gems and crystal specimens are mined.

Directions: Driving: From jct. of U. S. Rte. 2 and Rte. 5 (west of Bethel village), drive south on Rte. 5 for about 4.6 miles. Just past Songo Pond, turn left onto South Songo Road and drive 0.20 mile to parking area on right. (High-clearance 4-wheel drive vehicles may continue driving up the steep hill).

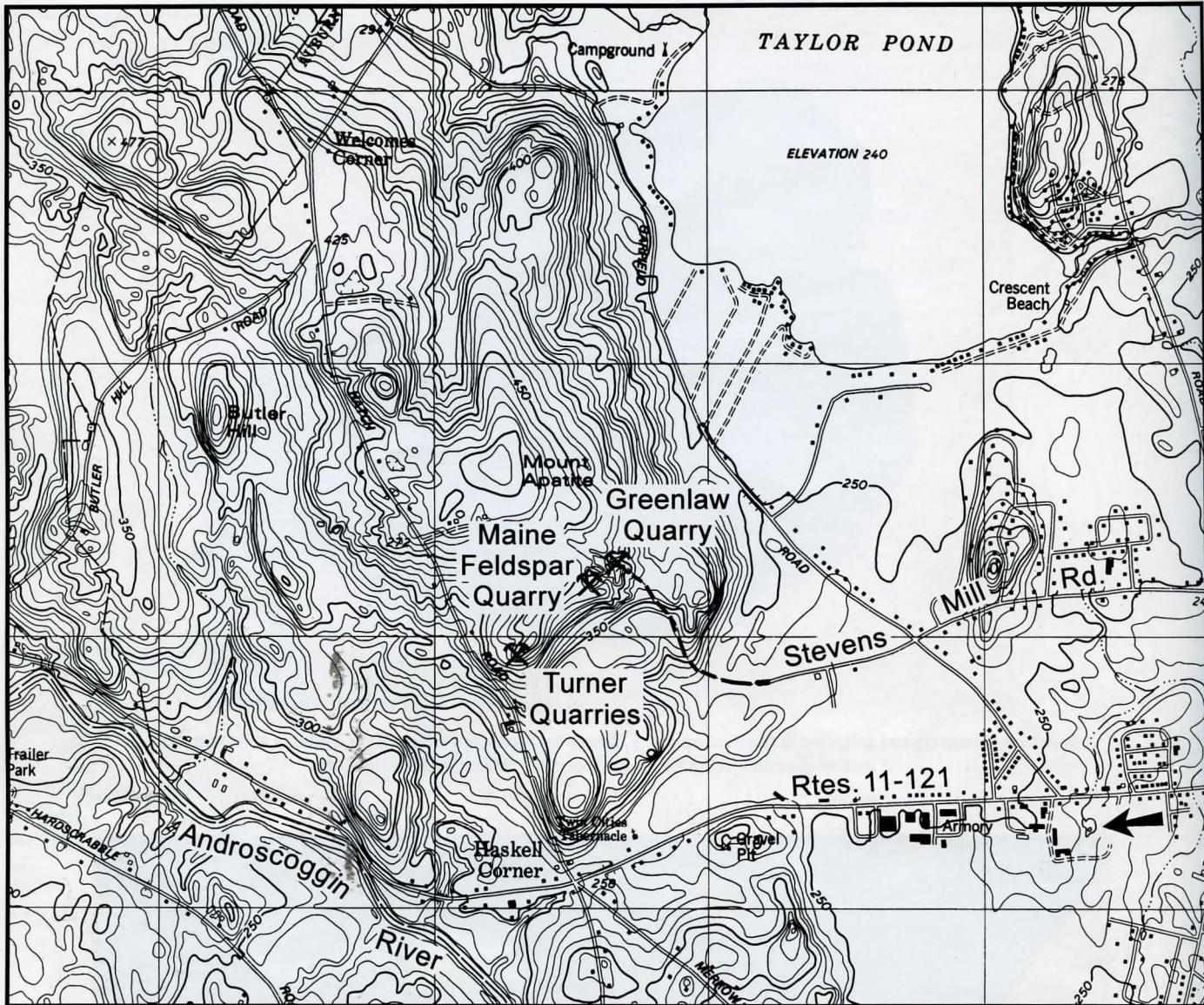
Walking: Walk uphill to east for about 1,000 feet to the quarry site.



Superb uraninite crystal collected at the Swamp No. 1 Quarry in Topsham (see p. 78). Crystal is approximately one inch in diameter. Don Swenson specimen. *Photo by Vandall King.*



A very large andalusite crystal in matrix, from Standish, Maine. Crystal is 13 inches long. John Raymond specimen. *Photo by Jenny Raymond.*

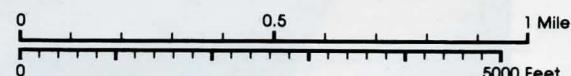


Localities #6 & 7: Mount Apatite Quarries - Eastern Group and Turner Quarries

Town: Auburn, Androscoggin County

Base map: Minot 7.5' quadrangle

Contour interval: 10 feet



Locality #6: Mount Apatite Quarries - Eastern Group (Maine Feldspar and Greenlaw Quarries)

Type of deposit: Granite pegmatite.

Collecting status: Open for collecting; permission not required. Owner: City of Auburn, Municipal Building, 45 Spring Street, Auburn, Maine 04210 (207-786-2421).

Minerals observed: albite, almandine (garnet), annite, arsenopyrite, autunite/meta-autunite, bertrandite, beryl (aquamarine, green, pink), biotite, cassiterite, cookeite, damourite, diadochite, dickinsonite, elbaite (tourmaline), eosphorite, fluorapatite, gahnite, hydroxyl-herderite, jahnsite group, lepidolite, lithiophilite, löllingite, malachite(?), manganocolumbite, man-

ganotantalite, microcline, microlite, montebrasite, montmorillonite, muscovite, pollucite, pyrite, quartz (milky, smoky), rhodochrosite, schorl (tourmaline), spodumene, torbernite/metatorbernite, uraninite, zircon.

Comments: The Greenlaw Quarry produced fine gem-quality elbaite crystals (green, pink, blue), and large parallel-growth clusters of smoky quartz crystals. Beware of high cliffs and water-filled pits. Dumps are scattered through woods.

Directions: Driving: From jct. of Rtes. 4-100-202 and 11-121 in Auburn, go west on Rtes. 11-121 for 1.90 miles. Turn right onto Garfield Road and drive northwest for 0.50 mile. Turn left onto Stevens Mill Road. Go 0.20 mile and park outside gate (note military compound on left).

Walking: Follow dirt road west across open field, then uphill through woods, for about 0.75 mile to the quarries. Greenlaw pits are on right; large water-filled Maine Feldspar Quarry is on left.

Minerals observed: albite (feldspar), almandine (garnet), beryl (green, blue, yellow), biotite, cassiterite, columbite, elbaite (tourmaline: green, pink, blue, bicolored), fluorapatite (blue, purple), lepidolite, microcline (feldspar), muscovite, quartz (milky, smoky), schorl (tourmaline), zircon.

Locality # 7: Turner Quarries

Type of deposit: Granite pegmatite.

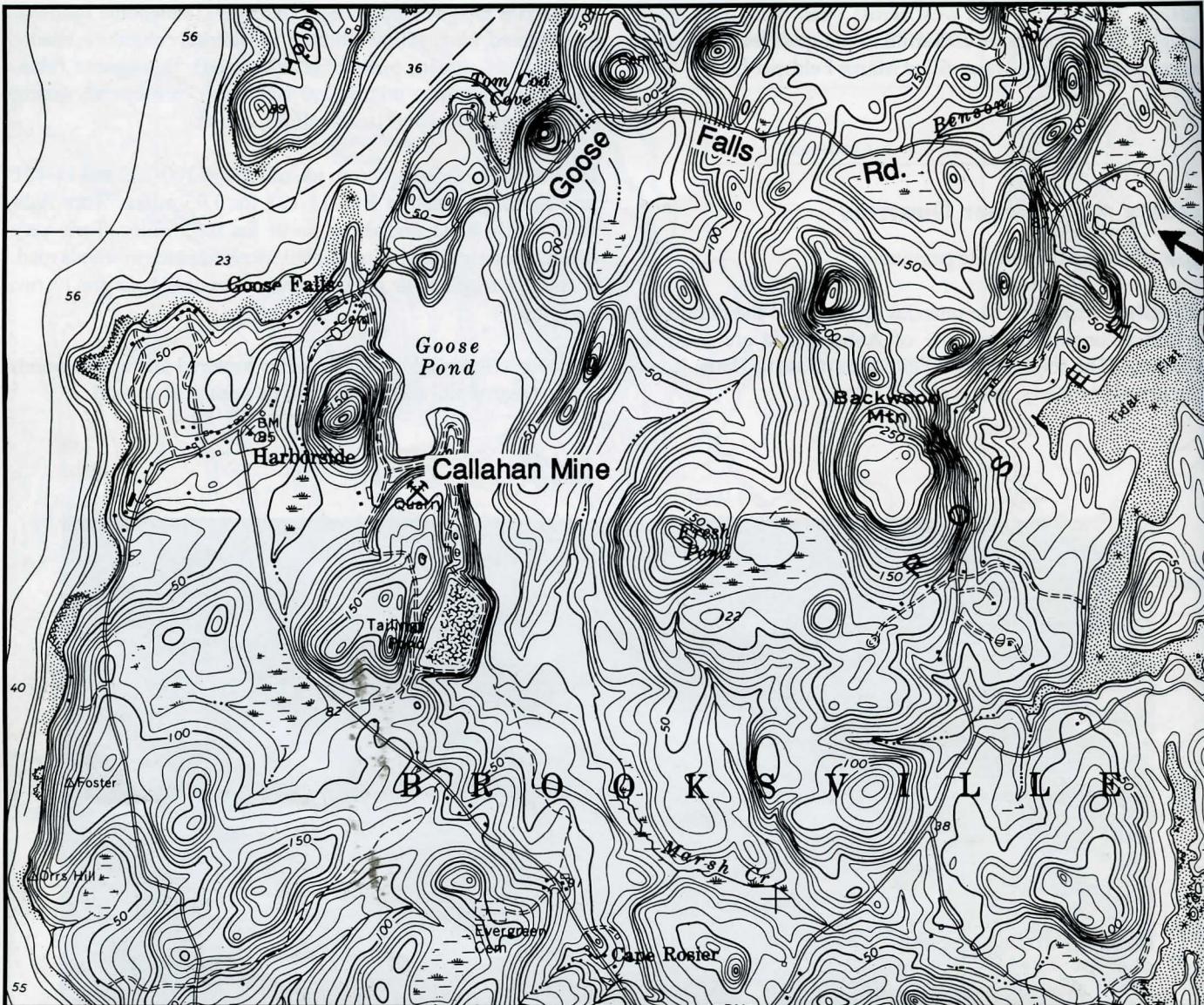
Collecting status: The quarries and most of the dumps are on land belonging to the City of Auburn, and are open for collecting. The southernmost dump area (close to Hatch Road) is on private property, and is closed.

Directions: Driving: From jct. of Rtes. 4-100-202 and 11-121 in Auburn, go west on Rte. 11-121 for 3.05 miles. Turn right onto Hatch Road and drive north for 0.55 mile. Park very carefully on right side of road, at blocked entrance to woods road. *Watch for traffic; this parking space can only hold one or two vehicles!*

Walking: Go uphill to east for a few hundred feet on the woods road. Quarry pits and dumps will be seen next to road.



Ray Woodman in underground workings at the Bumpus Quarry in Albany (see p. 23). Photo by Woodrow B. Thompson.

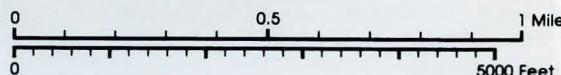


Locality #8: Callahan Mine (Harborside Mine; Cape Rosier Mine)

Town: Brooksville, Hancock County

Base map: Cape Rosier 7.5' quadrangle

Contour interval: 10 feet



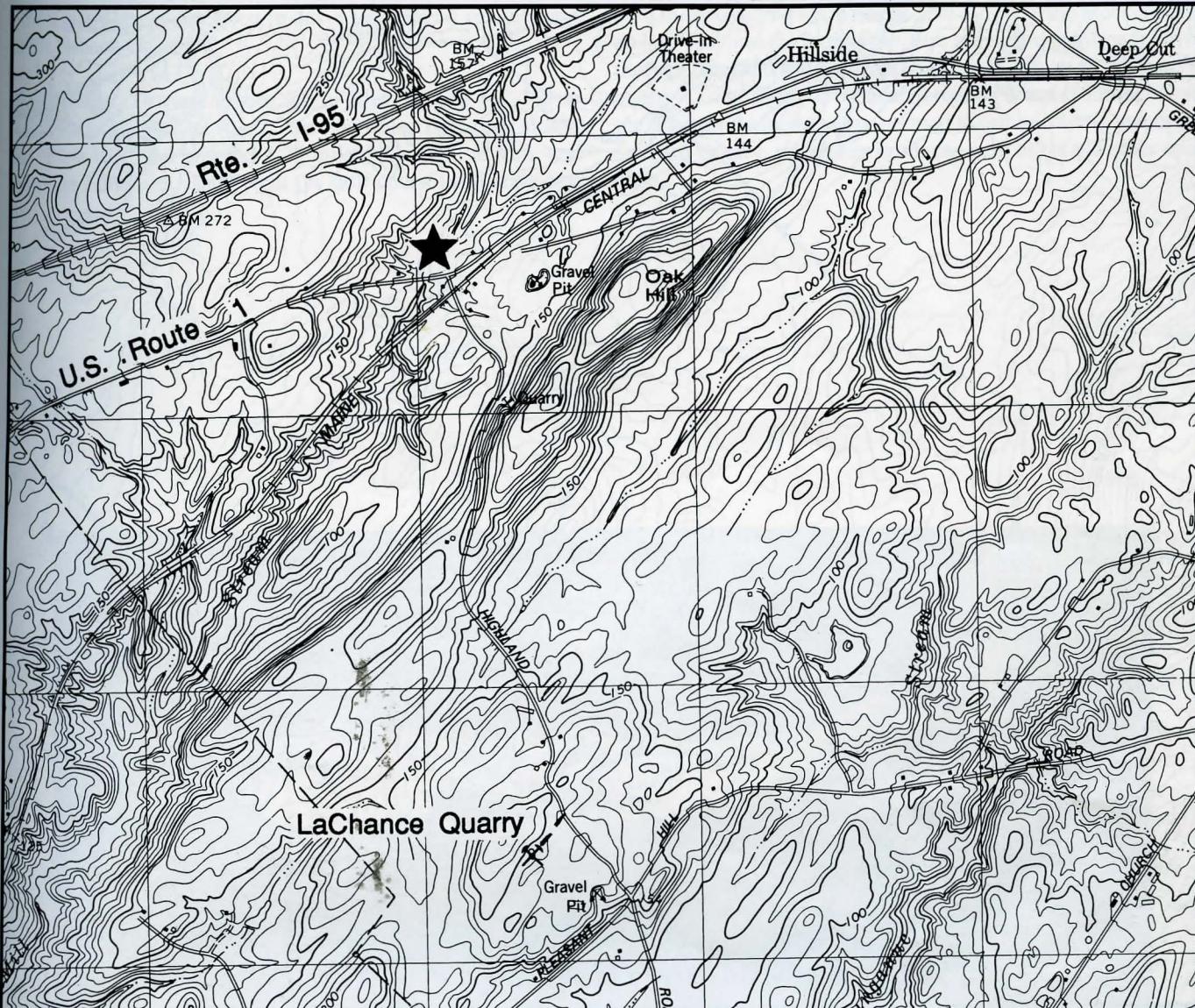
Type of deposit: Metal-sulfide ore deposit.

Collecting status: Inquire locally.

Minerals observed: allophane, anglesite(?), aragonite, arsenopyrite, aurichalcite, azurite, bismuth, bornite, brochantite, calcite, cerussite, chalcocite, chalcopyllite, chalcopyrite, chlorite, chrysocolla, copper, covellite, cubanite, cuprite, galena, garnet, goethite, gold, greenockite, gypsum, halite, hematite, hemimorphite, hornblende, hydrozincite, laumontite, limonite, linarite, mackinawite, malachite, marcasite, mica, pyrite, pyrolusite, pyrrhotite, quartz, rosasite, safflorite, siderite, silver(?), smithsonite, sphalerite, sulfur, talc, tennantite, titanite, tremolite, vallerite (list updated from Gregory, 1969, and King, 1983).

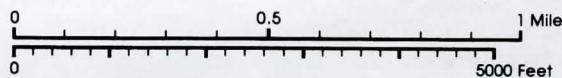
Comments: This mine was worked for zinc and copper ore intermittently from the 1880's until 1972. Levin and Sanford (1948) described its early production, and Bouley and Hodder (1984) characterized the geologic setting of the ore deposit. The Callahan Mine has yielded a diverse assemblage of secondary copper-lead-zinc minerals that is unusual for Maine.

Directions: *Driving:* From jct. of Rtes. 175 and 176 in Brooksville village, go west 4.50 miles on Rte. 176. Turn left onto Cape Rosier Road and proceed 1.65 miles. Turn right onto Goose Falls Road (gravel) and go 0.90 mile to where road to bird sanctuary turns right. Continue straight ahead for 1.0 mile, crossing Goose Falls Bridge. Turn left onto mine road. Mine will be in view at this point.



Locality #9: LaChance Quarry

Town: Brunswick, Cumberland County
Base map: Lisbon Falls South 7.5' quadrangle
Contour interval: 10 feet



Type of deposit: Granite pegmatite.

Collecting status: Open for collecting, but permission must first be obtained from the owner, Geoffrey LaChance, whose house is located just north of the mine road on the west side of Highland Rd. (207-725-7745).

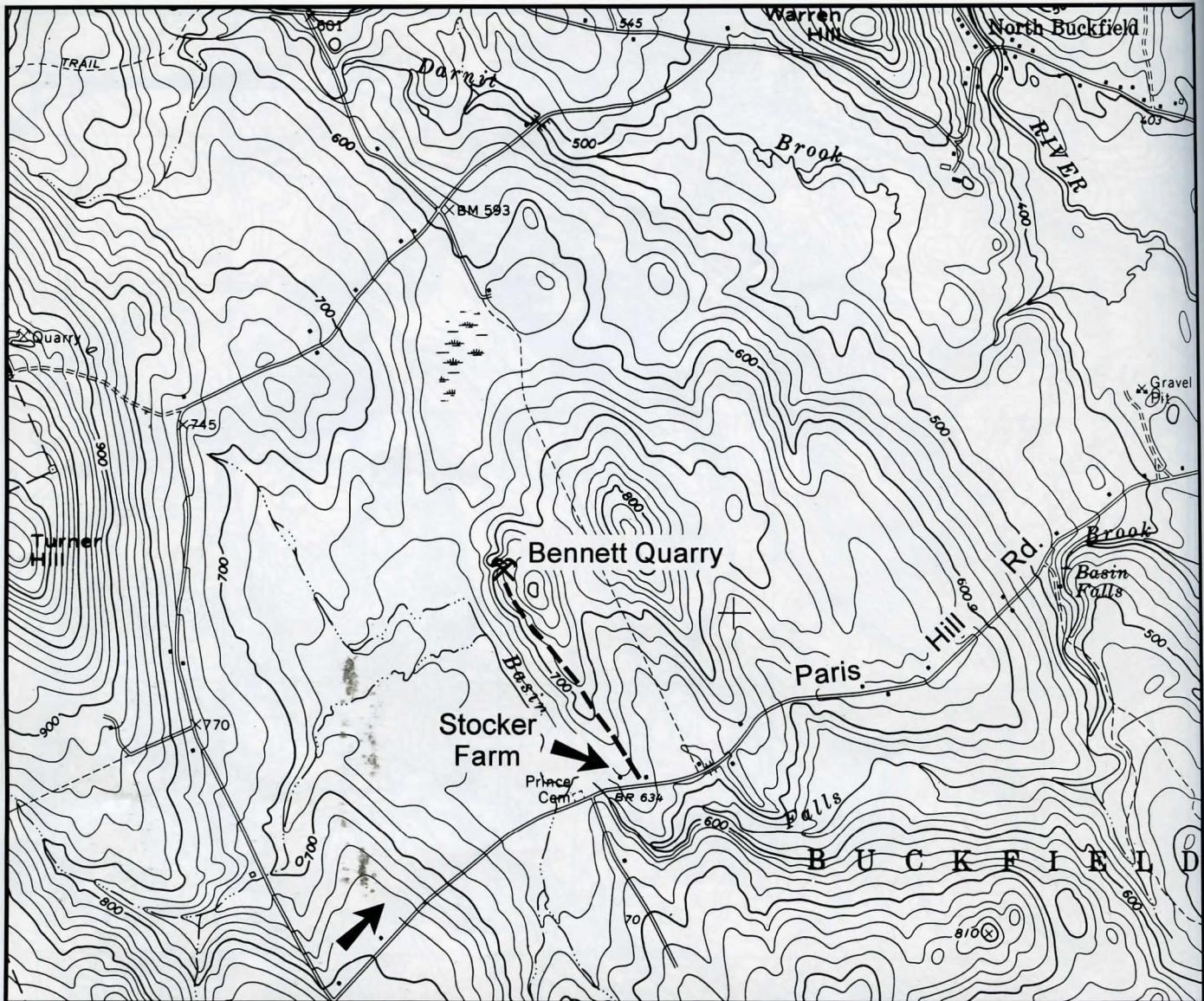
Minerals observed: albite, almandine (garnet), beryl (aquamarine, golden), biotite, columbite, fluorapatite, microcline, mica, muscovite, quartz, schorl (tourmaline).

Comments: The mine was opened in 1920 by Geoffrey LaChance. In 1926, General Electric Co. purchased clear quartz

that was mined here and used it in making the mirror for the giant telescope on Mt. Palomar in California (G. LaChance, personal communication)! Gemmy aquamarine beryl and scepter quartz crystals have also been found at this locality.

Directions: *Driving:* From the jct. of U. S. Rte. 1 and Highland Road (approximately one mile into Brunswick from the Freeport town line), drive south on Highland Road for 1.35 miles. Park on right at entrance to woods road leading to mine.

Walking: Walk southwest for 660 feet (220 paces) to the mine.

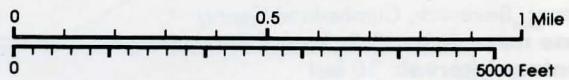


Locality #10: Bennett Quarry

Town: Buckfield, Oxford County

Base map: West Sumner 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Quarry pit is currently off-limits to collecting because of specimen mining operation, but dumps are open from time to time. Since 1989 the quarry has been worked by Ronald Holden, Jr., Holden Brothers Mining, P.O. Box 565, Norway, ME 04268 (207-743-5534).

Minerals observed: albite (var. cleavelandite), almandine (garnet), arsenopyrite, autunite/meta-autunite, beryl (aquamarine, golden, green, pink), biotite, carbonate-fluorapatite, cassiterite, chrysoberyl(?), cookeite, elbaite (tourmaline: green, pink, blue, bicolored, watermelon), eosphorite, fairfieldite, fluorapatite, goyazite, hydroxylapatite, hydroxyl-herderite, hureaulite, kaolinite, landesite, lepidolite, lithiophilite, manganocolumbite, manganotantalite, microcline, microlite, montebrasite, montmorillonite, muscovite, phenakite(?), pollucite, pyrrhotite,

quartz (milky, smoky), reddingite, rhodochrosite, romanechite, roscherite, schorl (tourmaline), spodumene, topaz, uraninite, zircon.

Comments: This is a complex pegmatite, with several compositional zones, successive generations of minerals, and large crystal-lined cavities. A tremendous number of quartz crystals have been found here, in pockets up to 30 feet across (O.C.M.G.A., Yearbook 18, 1965). Individual crystals were up to 3 feet long. Sporadic mining through the 1900's has produced gemmy tourmaline crystals, pink beryl (morganite) crystals, large blue-green beryls, and superb crystals of cassiterite and manganotantalite. Numerous small hydroxyl-herderites are perched on quartz crystals. Spectacular morganite and quartz crystals, as well as blue fluorapatite crystals and other choice specimens, have been found during the recent period of mining beginning in 1989 (Holden, 1990). Landes (1925) and Wise and

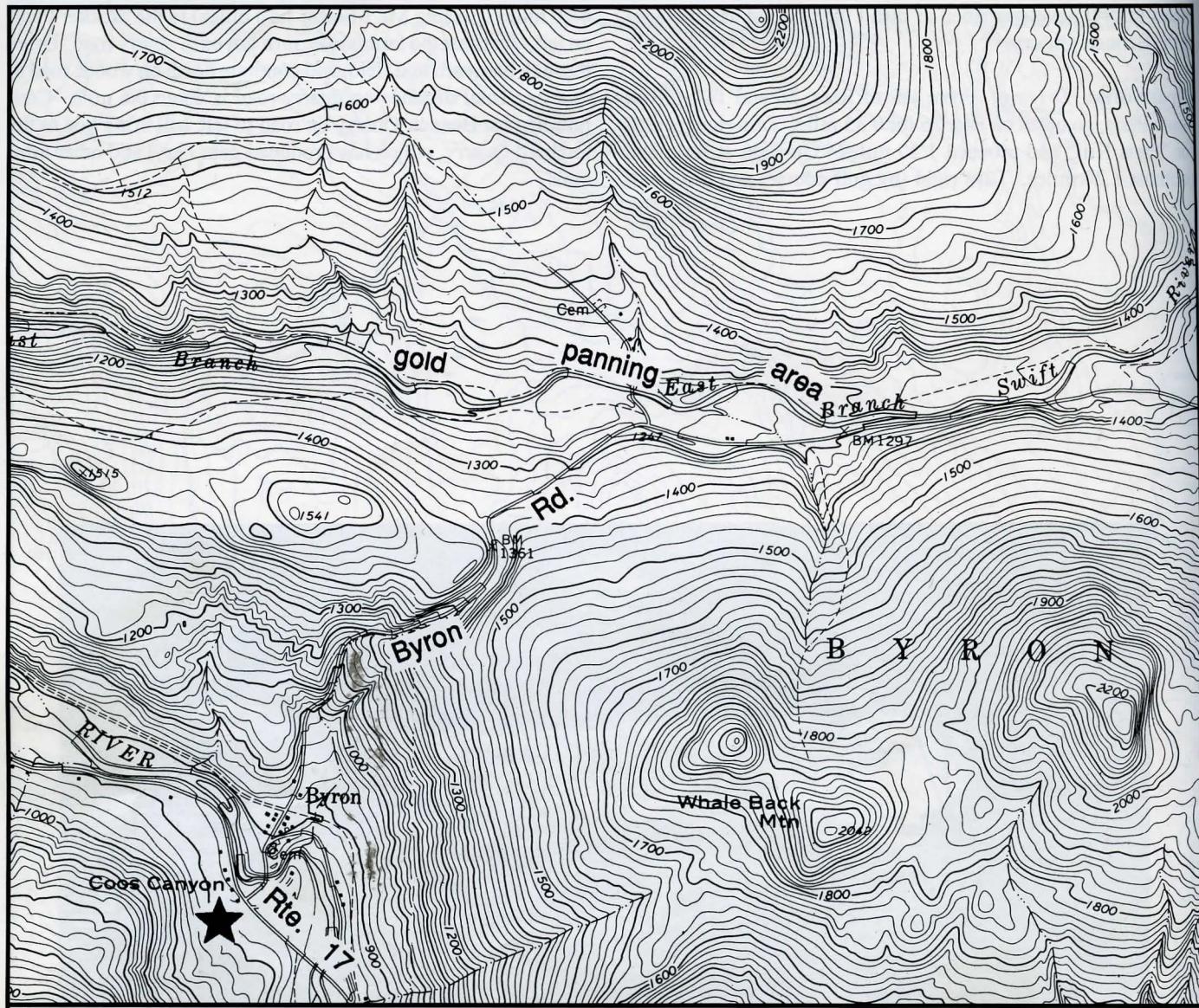
others (1994) have described in detail the mineral assemblages at the Bennett Quarry.

Directions: Driving: From jct. of Rtes. 26 and 117-119 in South Paris, go north on Rte. 26 for 0.35 mile. Turn right at sign for "Paris Hill" and proceed 1.20 miles. Go right at fork, and continue 1.20 miles. Turn right (by golf course) and drive east

4.70 miles (passing Mt. Mica at 1.50 miles) to the Stocker Farm on left. Just past the farmhouse, turn left onto quarry road. Drive through barnyard and field, and continue north on woods road to quarry. Total distance on quarry road is about 0.6 mile. Continuing past Bennett Quarry on road to left will bring you to the Orchard Quarry, which has produced gem beryl and other minerals.



West end of Bennett Quarry, Buckfield, 1990. Photo by Woodrow B. Thompson.

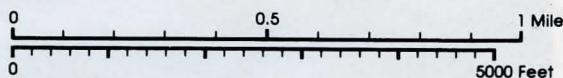


Locality #11: Swift River Gold Panning Area

Town: Byron, Oxford County

Base map: Roxbury and Ellis Pond 7.5' quadrangles

Contour interval: 20 feet



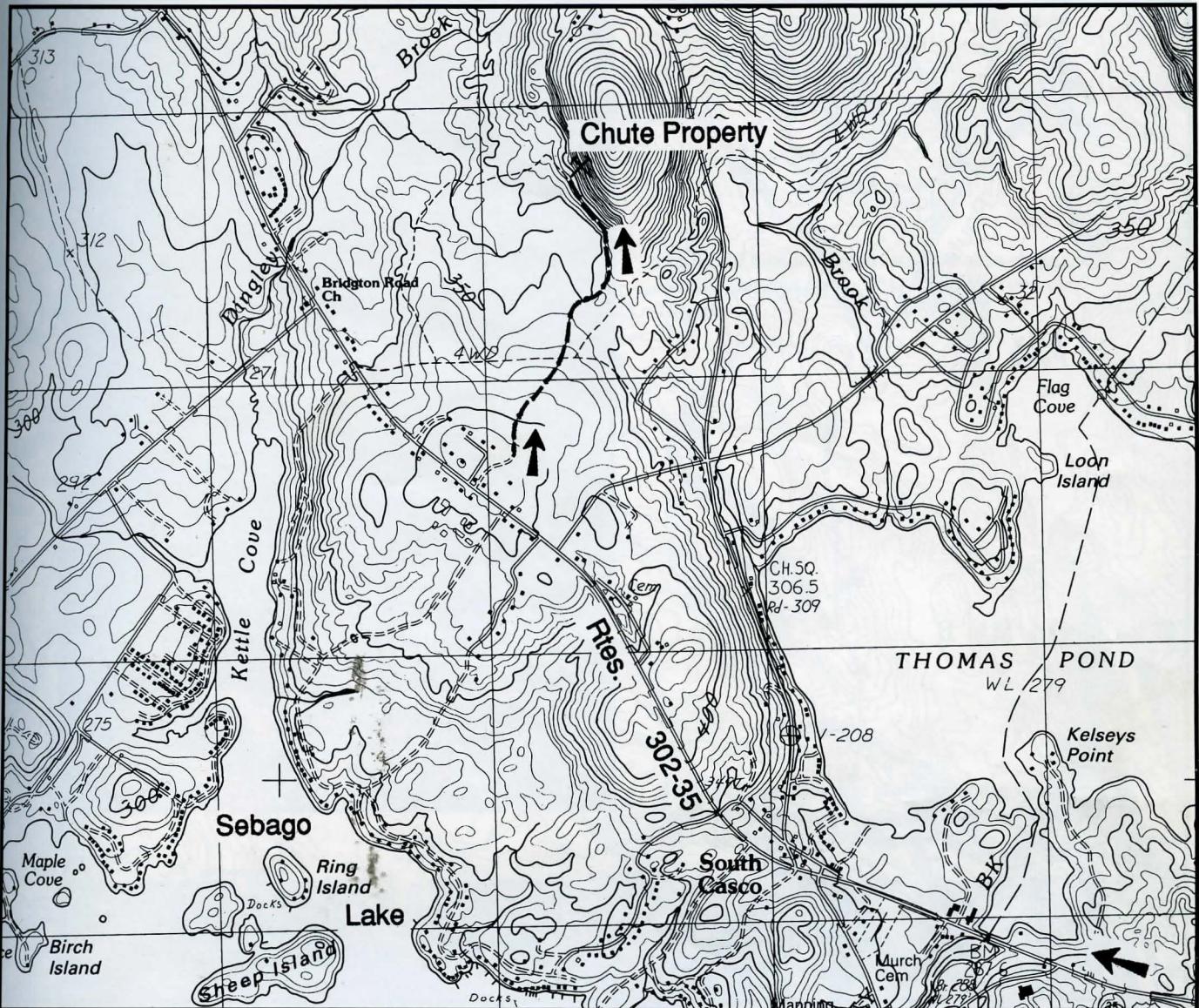
Type of deposit: Placer (in stream gravel).

Collecting status: Open for gold panning. The land in this area is owned by Boise Cascade Corp., whose permission is required. Contact: Timberlands Manager, Boise Cascade Corporation, Rumford, Maine 04276 (207-364-4521). Disturbance of the river bank is not allowed. No State permit is required for gold panning, use of suction dredges with a hose diameter of 4 inches or less, or sluices of less than 10 square feet. Larger-scale operations require a permit from the Maine Department of Environmental Protection.

Minerals observed: gold and other heavy minerals associated with placer deposits (almandine garnet, biotite, magnetite, scheelite, staurolite, etc.).

Comments: Highest gold concentrations reportedly occur downstream from parking area. Gold from this area was used in making the chain for a tourmaline necklace which was presented to the State by the Maine Retail Jewelers' Association. A circular on gold in Maine is available from the Maine Geological Survey. There is much interesting information in a book titled "The Next Bend in the River: Gold Mining in Maine" (Stevens, 1989).

Directions: Driving: From Coos Canyon picnic area on Rte. 17 in Byron, drive 1.65 miles north and east on Byron Road (toward Byron Notch and Tumbledown Mtn.). Turn left onto unpaved road. Take right fork and cross East Branch Swift River. Park on left or right just after crossing bridge.

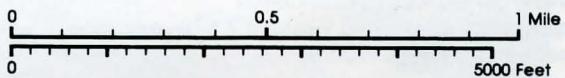


Locality #12: Chute Property

Town: Casco, Cumberland County

Base map: Naples 7.5' quadrangle

Contour interval: 10 feet



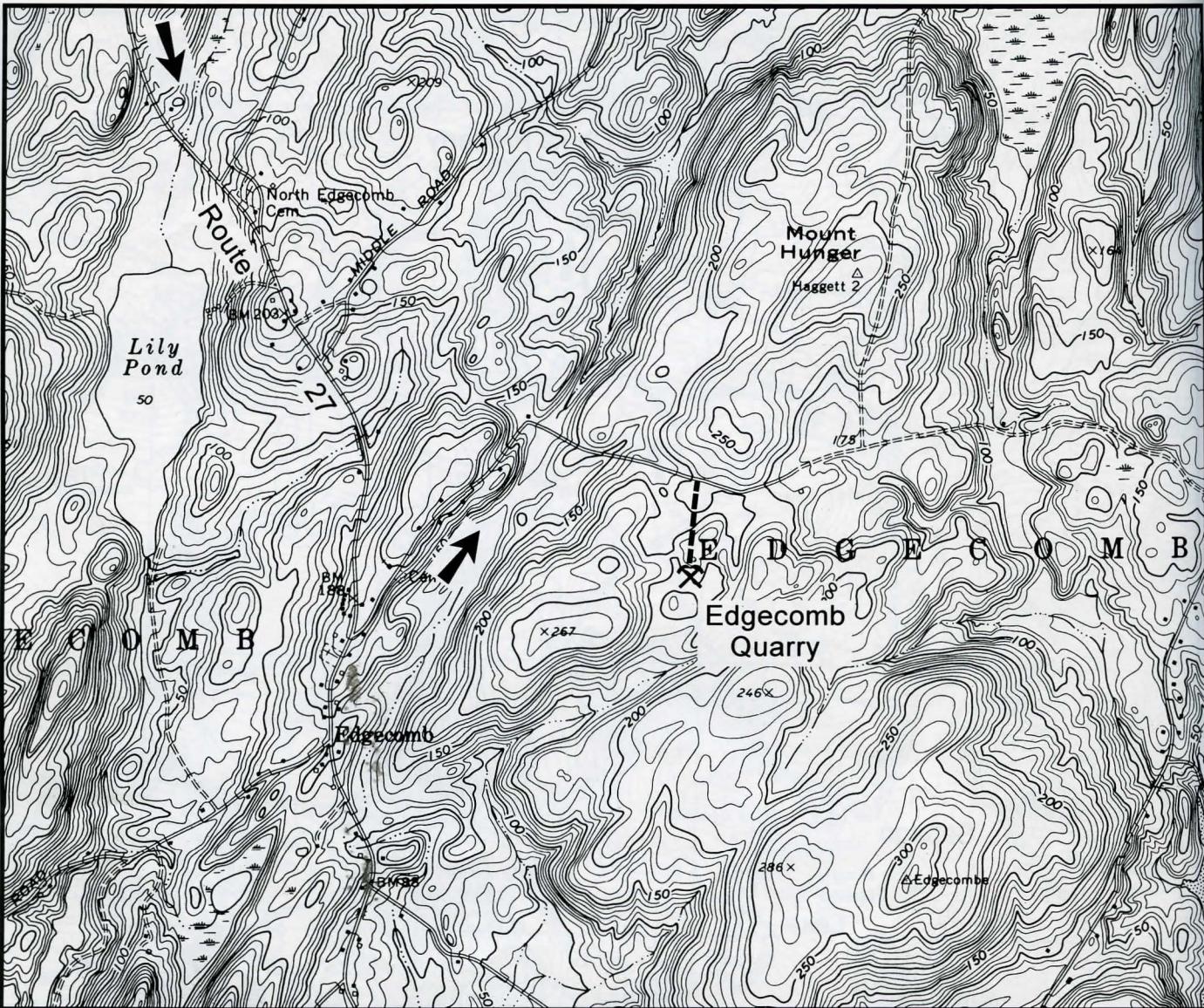
Type of deposit: Calc-silicate minerals in metamorphic rock.

Collecting status: Open for collecting; permission not required, but owner is interested in minerals and should be contacted if possible. Owner: Edward Chute (Chute Bakery), Box 100, South Casco, Maine 04077 (207-655-7111).

Minerals observed: calcite, clinozoisite, diopside, fluorite, grossular (garnet), meionite (scapolite group), pyrite, quartz (milky, smoky), unidentified sulfide, titanite, vesuvianite.

Comments: The Chute prospect has produced excellent crystals of orange grossular garnet ("cinnamon garnet," "essonite"). Diopside and vesuvianite may also be found in crystal form. Calc-silicate rock is very hard; come prepared with heavy hammers.

Directions: Driving: From jct. of Rtes. 302-35 with Rte. 85 in Raymond, drive northwest 4.55 miles on Rtes. 302-35. Turn right at Chute Bakery and Restaurant (across from lumber mill). Follow road behind bakery to Chute residence. Continue north (passing to left of house) on woods road to garnet locality. Total driving distance from main road is about 0.85 mile.

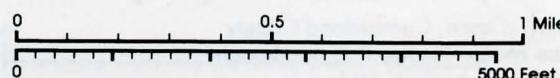


Locality #13: Edgecomb Quarry

Town: Edgecomb, Lincoln County

Base map: Bristol and Westport 7.5' quadrangles

Contour interval: 10 feet



Type of deposit: Granite pegmatite.

Collecting status: The quarry is located in the C. O. Schmid Preserve, which belongs to the Town of Edgecomb. It is open for recreational mineral collecting.

Minerals observed: almandine (garnet), beryl (var. aquamarine), biotite, microcline (feldspar), muscovite, quartz (milky, smoky).

Comments: This is a mineralogically simple pegmatite, and crystal specimens are very uncommon. However, it may be of interest to beginning collectors.

Directions: *Driving:* From jct. of U.S. Rte. 1 with Rte. 27 in Edgecomb, drive south on Rte. 27 for 3.10 miles. Take sharp left turn onto Old County Rd. and drive 0.75 mile to where driveways turn left and right. From this point, continue straight ahead for another 0.30 mile on woods road, driving carefully over rough parts. Turn right into parking area for C. O. Schmid Preserve, at entrance to side road, and park on left side of this road (avoid private property on right side).

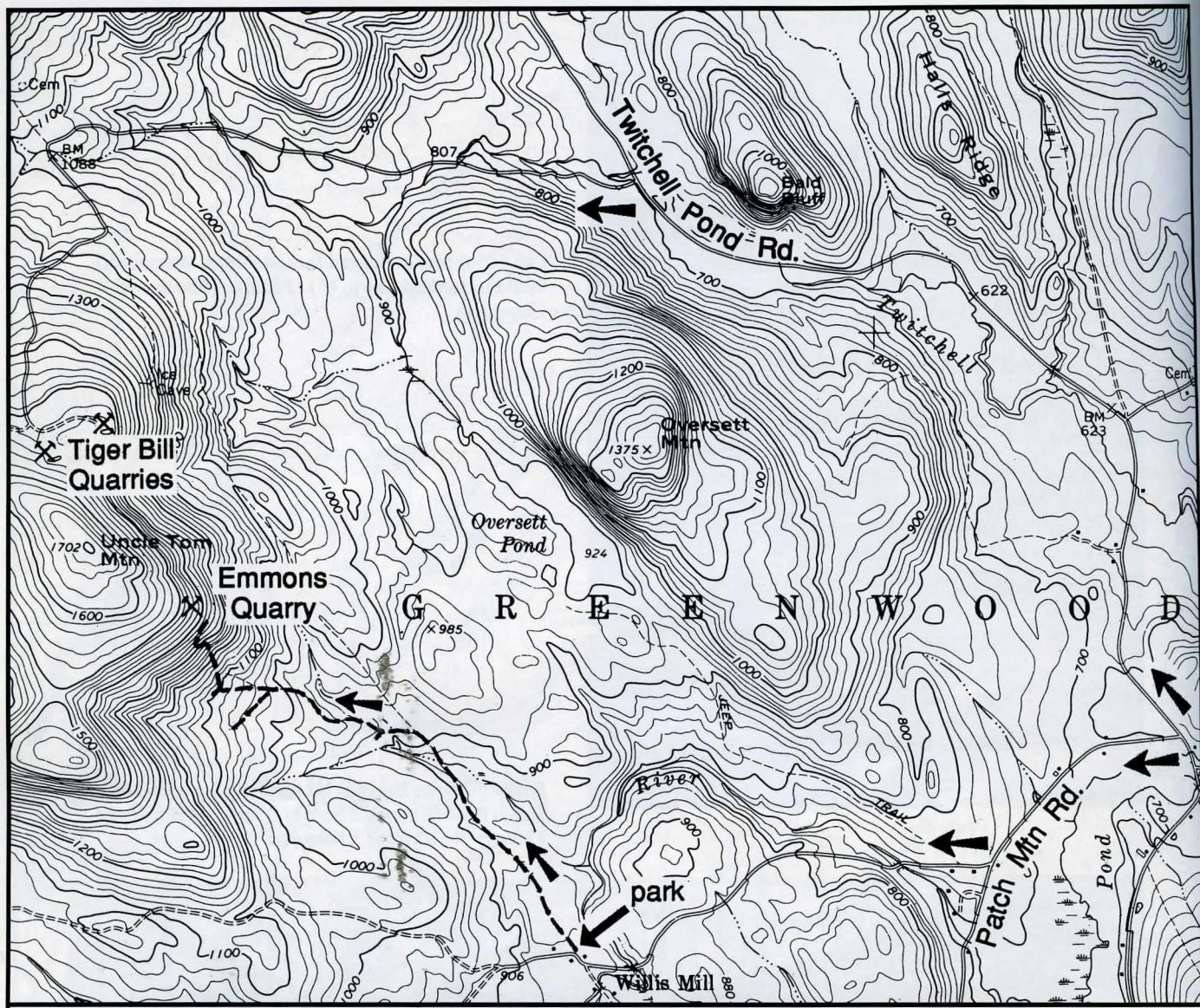
Walking: Walk south on woods road for about 900 feet (300 paces) to clearing on knoll. Quarry pits and dumps are in woods on south side of clearing.



Left: Cliff face at Ragged Jack Mountain chrysoberyl locality, Hartford (see p. 45). Photo by Woodrow B. Thompson.

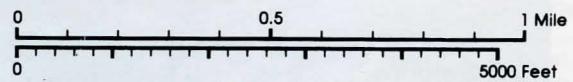
Below: Charles Bragg at his beryl mining operation, Songo Pond (Kimball's Ledge) Quarry, Albany, 1989. Photo by Woodrow B. Thompson.





Localities #14 & 15: Emmons Quarry and Tiger Bill Quarries

Town: Greenwood, Oxford County
Base map: Greenwood 7.5' quadrangle
Contour interval: 20 feet



Locality #14: Emmons Quarry (Uncle Tom Mtn. Quarry)

Type of deposit: Granite pegmatite.

Collecting status: Currently closed due to mining activity. For further information, contact: Ray Sprague, 93 Main St., #9, Andover, MA 01810, Phone: (508) 475-8435. Owner: Penley Timberlands (located in Post Office building), West Paris, Maine 04289 (207-674-2501).

Minerals observed: albite (including var. cleavelandite), almandine (garnet), arsenopyrite, autunite/meta-autunite, beraunite, bermanite, bertrandite, beryl (pale green, pink), beryl-lonite, biotite, cassiterite, cookeite, crandallite, diadochite, dickinsonite, earlshannonite (whitmoreite), elbaite (tourmaline)

(blue, green), eosphorite, fairfieldite, fluorapatite, gahnite, goyazite, hureaulite, hydroxylapatite, hydroxyl-herderite, jahnsite-(MnMnMn), landesite, laueite, lepidolite, leucophosphate, lithiophilite, löllingite, ludlamite, manganocolumbite, microcline, mitridatite, montebrasite, montmorillonite, moraesite, muscovite, perhamite, reddingite, phosphophyllite, phosphosiderite, pollucite, purpurite, quartz (milky, smoky), reddingite, rhodochrosite, robertsite, rockbridgeite, schorl (tourmaline), scorodite, siderite, spodumene, stewartite, strengite, strunzite, switzerite-metaswitzerite, todorokite, triphylite, unidentified Fe-Mn phosphates, uraninite, vivianite, wodginite, zircon.

Comments: Sizable quantities of pollucite and pink beryl have been found here, as well as lustrous cassiterite crystals and a variety of phosphates. This quarry used to be hard to find, but the quarry road has been improved and is now easy to follow.

(The quarry location shown on a map by Morrill and others (1958) is in error by at least 0.3 mile.)

Directions: Driving: From jct. of Rtes. 26 and 219 in West Paris, drive 5.55 miles west to end of Rte. 219. Turn right onto Twitchell Pond Road and go 0.10 mile northwest. Turn left onto Patch Mtn. Road (paved) and continue 0.60 mile. Turn right at fork, onto unnamed gravel road (which may be very rough in places during logging operations), and proceed west 1.05 miles to where dirt road enters from left at Willis Mill. Bear to right and continue 0.05 mile to next bend in main road, where a woods road turns off to the right. Park here.

Walking: Go northwest about 0.65 mile (3,400 ft) on woods road to jct. with quarry road on left (about 500 feet after crossing brook). Turn left onto this road and walk generally west-northwest for about 2,310 feet (770 paces) to next jct. Take road to right and walk uphill to west for about 480 feet (160 paces) to next fork, which is located in small clearing. Go right, and proceed uphill on quarry road as follows: 600 feet NNW - bend - 150 feet W - bend - 300 feet NE. This brings you to the lower part of the quarry dump. The pit is just uphill from here.

berlands (located in Post Office building), West Paris, Maine 04289 (207-674-2501).

Minerals observed: albite, almandine (garnet), autunite/meta-autunite, bertrandite, beryl, biotite, fluorapatite (blue, purple), hydroxyl-herderite, microcline, muscovite, pyrite, quartz, schorl (tourmaline).

Comments: Excellent blue fluorapatite crystals have been found in feldspar cavities at this locality. Gemmy aquamarine and golden beryl reportedly occur here (O.C.M.G.A., Yearbook No. 4, 1951; Morrill, 1958).

Directions: Driving: From jct. of Rtes. 26 and 219 in West Paris, drive west 5.55 miles to end of Rte. 219. Turn right and drive 2.30 miles on Twitchell Pond Road to woods road entrance on left. Park here. (Four-wheel drive vehicles may be able to continue.)

Walking: Walk west on woods road for 1.45 miles. Turn left at fork and continue for 0.25 mile. Quarry road swings to right at this point.* Keep right and follow this road uphill for about another 0.50 mile. Where it bends to left, go straight ahead a very short distance to the Tiger Bill Quarry. Keeping left at the last bend in road brings you to the other quarry.

*To visit the Greenwood "ice caves," walk 600 feet straight ahead from this bend in road, until reaching fork in trail. Take trail to right and proceed about 0.30 mile to caves. These are deep fissures in the ledge where glacial action has pried out huge slabs of rock from the hillside.

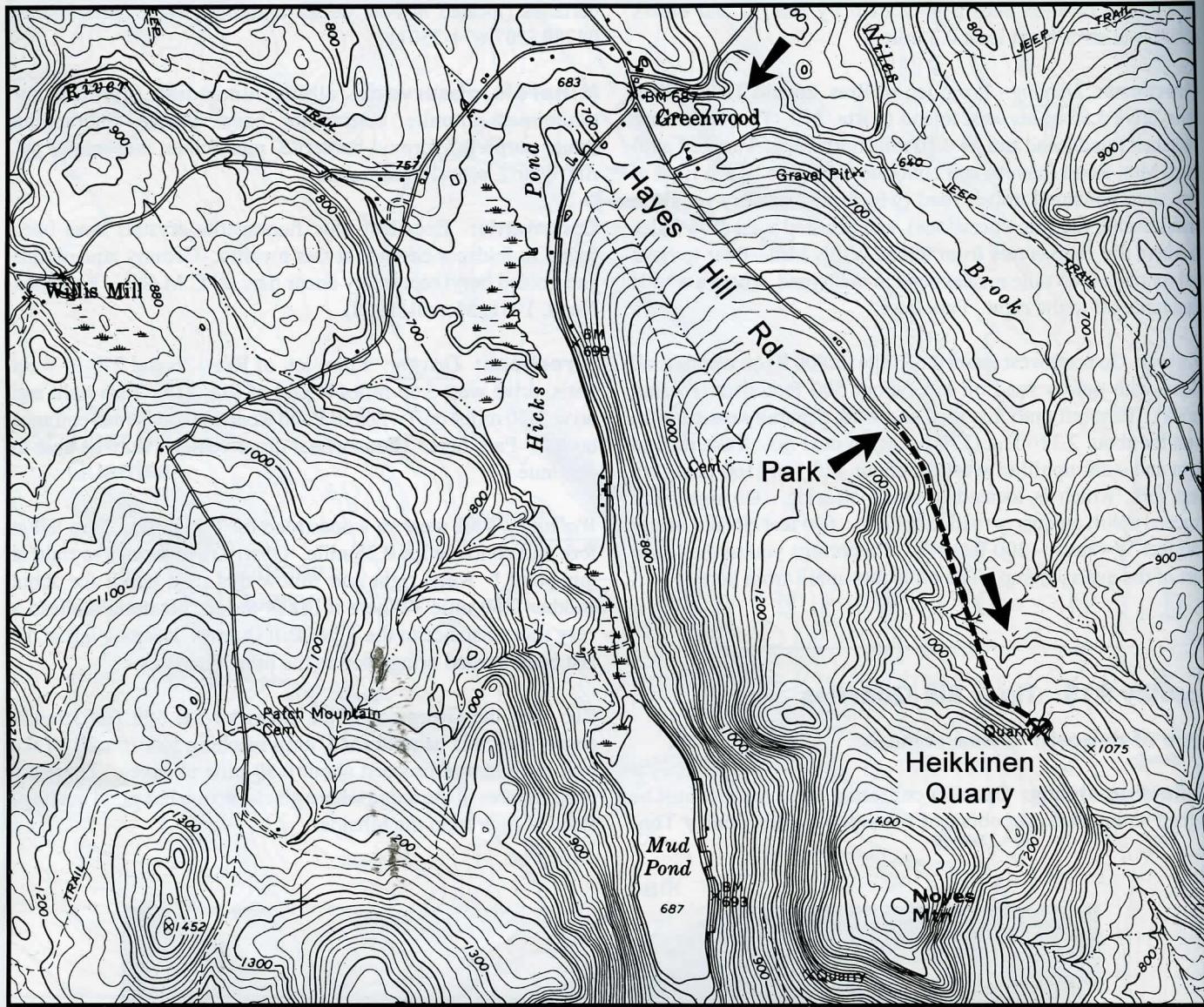
Locality #15: Tiger Bill Quarries

Type of deposit: Granite pegmatite.

Collecting status: Open for collecting, but a release must be signed and permission obtained from the owner: Penley Tim-



Excavating pockets at the Emmons Quarry, Greenwood (1994). Photo by Woodrow B. Thompson.

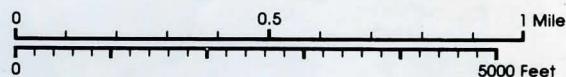


Locality #16: Heikkinen Quarry

Town: Greenwood, Oxford County

Base map: Greenwood 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Open for hobby mineral collecting; permission not required. Mineral rights currently owned by Frank Perham, West Paris, ME 04289 (207-674-2921).

Minerals observed: albite (feldspar), almandine (garnet), autunite, beryl, biotite, columbite, kasolite, microcline (feldspar), muscovite, opal (var. hyalite), pyrite, schorl (tourmaline), zircon.

Comments: According to Perham (1987) the Heikkinen Quarry was operated for feldspar on several occasions beginning in the 1930's. It is known for fluorescent minerals (autunite and hyalite), and produced a beryl crystal 10 feet long. There has not

been much activity here recently, but a careful search of the dumps might turn up some interesting minerals.

Directions: Driving: From the jct. of Rtes. 26 and 219 in West Paris, drive west for 5.60 miles to the end of Rte. 219 in Greenwood. Turn left (south), continue 0.10 mile, and turn left onto Hayes Hill Road. Drive 0.95 mile to end of improved road. Check at house for permission to park. If owner isn't home, continue a few feet onto woods road and park so as not to block school bus turnaround in yard. Parking space is suitable for only one or two collector vehicles at a time.

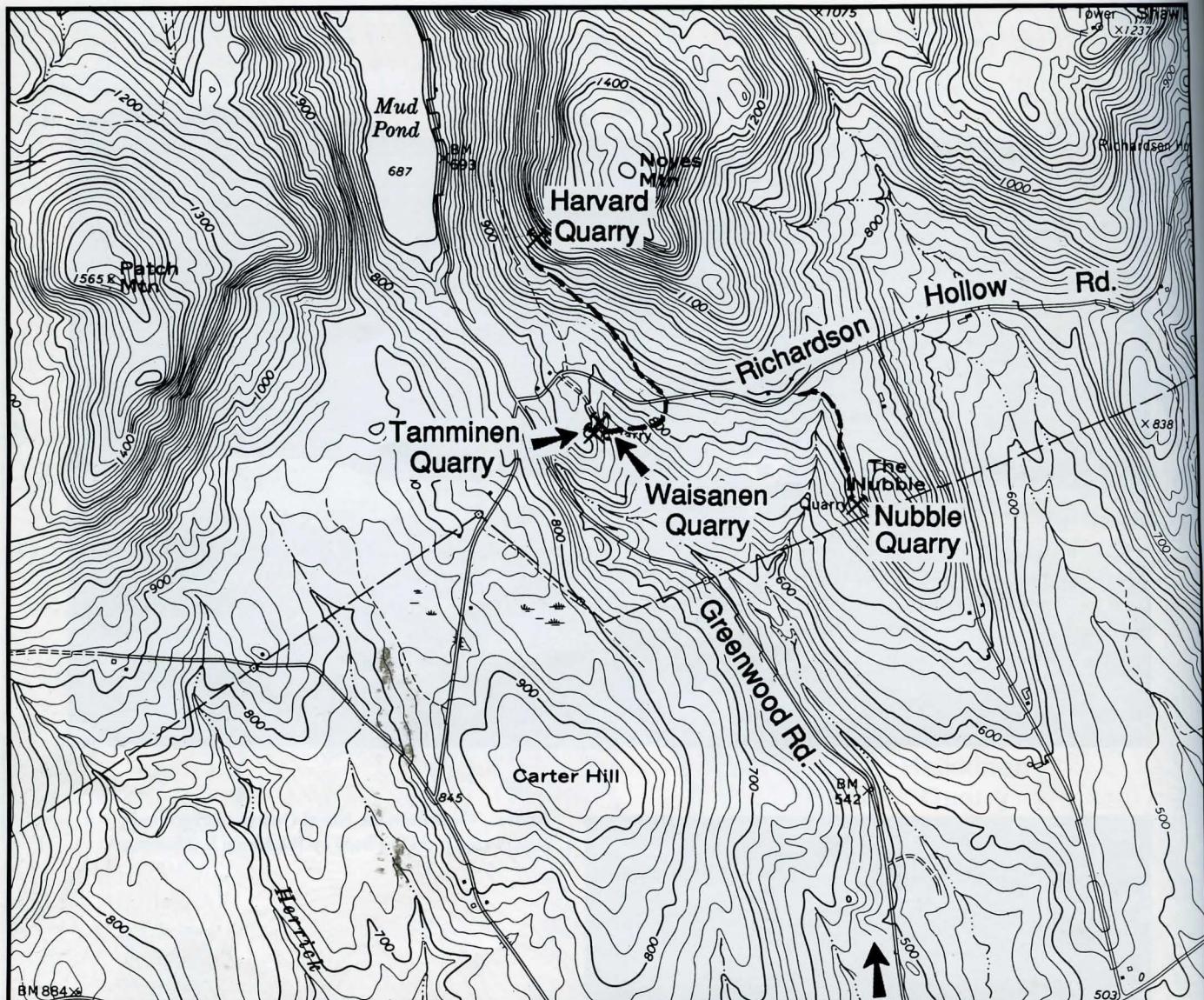
Walking: Walk south on old woods road for about 1500 paces (4500 feet) to the Heikkinen Quarry. The quarry pit is a long narrow cut into the hillside on the left side of road. Dumps are mainly on the right side of the road.



Above: View from the Nevel Quarry (foreground),
Newry (see p. 51). Photo by Woodrow B. Thompson.



Left: Opening of the Scotty Quarry on Plumbago Mountain, Newry, by the Beryllium Development Corporation, 1952 (see p. 50). Photo by Neil Wintringham.

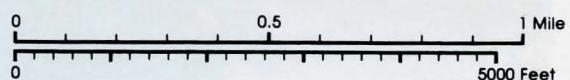


Localities #17, 18, 19, & 20: Harvard, Nubble, Tamminen, and Waisanen Quarries

Town: Greenwood, Oxford County

Base map: Greenwood and West Paris 7.5' quadrangles

Contour interval: 20 feet



Locality #17: Harvard Quarry

Type of deposit: Granite pegmatite.

Collecting status: Open for collecting; permission not required. Owner: Perham family, Perham's of West Paris, West Paris, Maine 04289 (207-674-2341).

Minerals observed: albite (including var. cleavelandite), almandine (garnet), arsenopyrite, autunite/meta-autunite, bertrandite, beryl, beryllonite, biotite, brazilianite(?), calcite (in country rock adjoining pegmatite), cassiterite, cookeite, damourite, diopside (in country rock), elbaite (tourmaline), ferroaxinite (in country rock), fluorapatite (purple, blue), gahnite, goyazite(?), hydroxyl-herderite, kaolinite, lepidolite, manganese-columbite, meionite, microcline, microlite(?), montebrasite, montmorillonite, muscovite, phenakite(?), pollucite, quartz,

schorl (tourmaline), spodumene, topaz(?), vesuvianite (in country rock), vivianite, zircon (var. cyrtolite).

Comments: This quarry is best known for producing fine crystals of lilac to purple fluorapatite. Lustrous black cassiterite crystals and tabular blue fluorapatite crystals are also among the noteworthy finds. The locality is named after Harvard University, which operated it for mineral specimens in 1923-24. Perham (1987) summarized the history of the Harvard Quarry. Caution: the dumps and hillside are very steep here.

Directions: Driving: From jct. of Rtes. 117 and 118 in Norway, go west on Rte. 118 for 0.95 mile. Turn right onto Greenwood Road and drive northwest 5.30 miles. Turn right onto Richardson Hollow Road and continue 0.40 mile to parking area on right. Trail to quarry is across road (north side) from parking area.

Walking: Follow trail (which may be marked with blazes or signs) uphill approximately 3,000 feet to quarry.

scepter and pseudo-cubic crystals, amethyst, citrine), scheelite (in country rock), schorl (tourmaline), sphalerite, spodumene, topaz, uraninite, vesuvianite (in country rock).

Locality #18: The Nubble Quarry (Waisanen Mica Mine)

Type of deposit: Granite pegmatite.

Collecting status: Open for collecting; permission not required. Owner: Perham family, Perham's of West Paris, West Paris, Maine 04289 (207-674-2341).

Minerals observed: albite, almandine (garnet), beryl, beryl-lonite(?), chalcopyrite, chrysoberyl, biotite, fluorapatite, microcline, muscovite, pyrite, quartz (milky, rose, smoky, asteriated), schorl (tourmaline), zircon.

Directions: *Driving:* From jct. of Rtes. 117 and 118 in Norway, go west on Rte. 118 for 0.95 mile. Turn right onto Greenwood Road and drive northwest 5.30 miles. Turn right onto Richardson Hollow Road and continue 0.65 mile. Park (unless you have a four-wheel drive vehicle) at entrance to woods road on right, across from white house with barn.

Walking: Go 0.30 mile to fork in woods road. Right-hand trail goes to bottom of quarry dump; left-hand trail goes to pit (marked on topographic map).

Locality #19: Tamminen Quarry

Type of deposit: Granite pegmatite.

Collecting status: Open for hobby collecting; permission not required. Owned and operated by Frank Perham, West Paris, Maine 04289 (207-674-2921).

Minerals observed: albite (including var. cleavelandite), almandine (garnet), autunite/meta-autunite, bertrandite, beryl (blue, green, pink), biotite, bismuth(?), calcite, cassiterite, cookeite, damourite, dickinsonite, elbaite (tourmaline), eosphorite, fairfieldite, fluorapatite, "gummite," hureaulite, hydroxyl-herderite, lepidolite, lithiophilite, manganocolumbite, manganotantalite, meionite, microcline, montebrasite, montmorillonite, muscovite, petalite, pollucite, quartz (including

scepter and pseudo-cubic crystals, amethyst, citrine), scheelite (in country rock), schorl (tourmaline), sphalerite, spodumene, topaz, uraninite, vesuvianite (in country rock).

Comments: The Tamminen Quarry is one of only two places in the U. S. where pollucite crystals have been found. They occur as tiny crystals along seams in petalite. Petalite (a rare lithium mineral) is relatively abundant here, but is difficult for the novice to distinguish from feldspar and other white minerals. Many quartz crystals have also been found, including the odd cubic-looking ones.

Directions: Same as for the Waisanen Quarry (see below). The Tamminen Quarry is 0.10 mile farther on the same mine road.

Locality #20: Waisanen Quarry (Tamminen-Waisanen Ledge)

Type of deposit: Granite pegmatite.

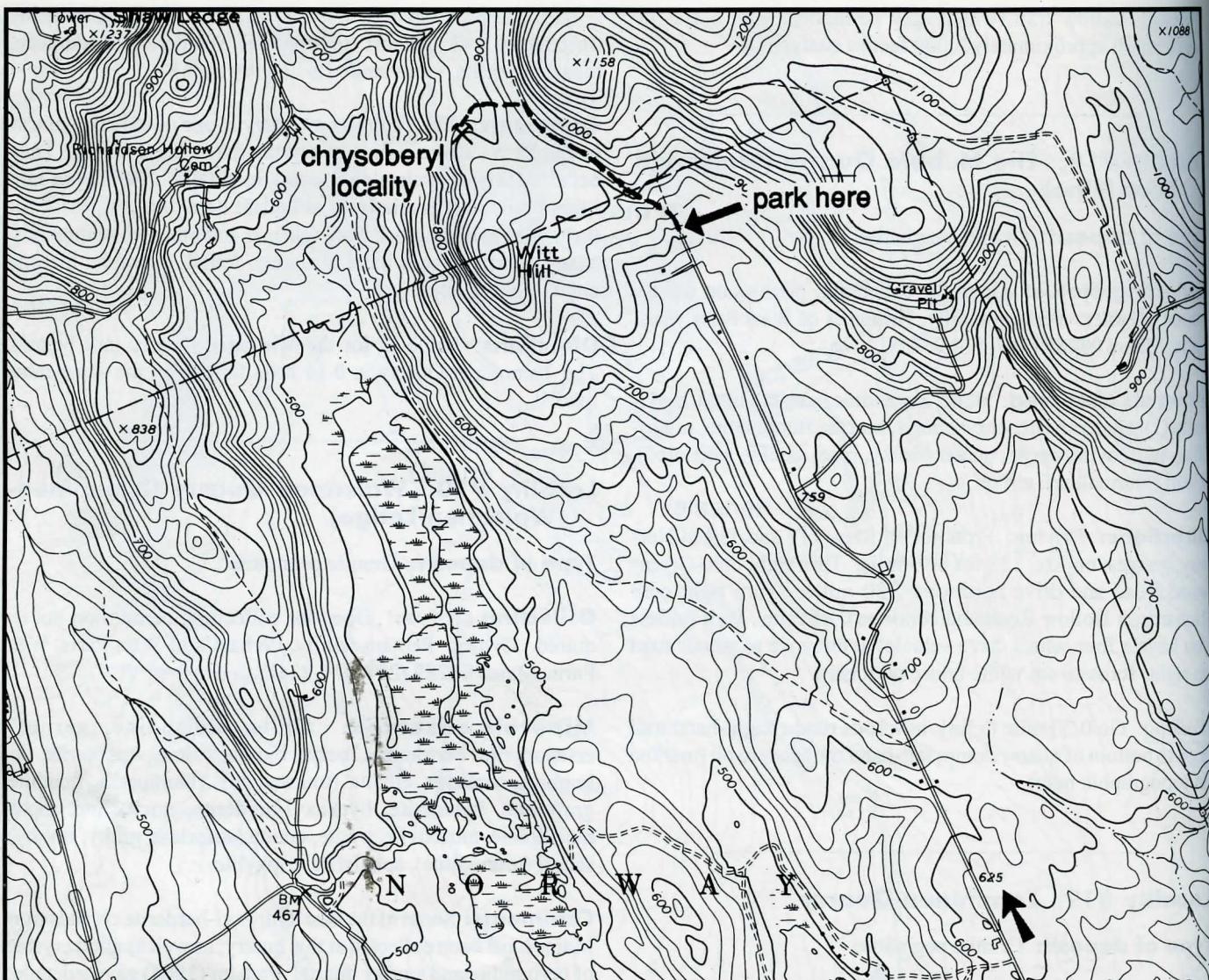
Collecting status: Open for collecting; permission not required. Owner: Perham family, Perham's of West Paris, West Paris, Maine 04289 (207-674-2341).

Minerals observed: albite, almandine (garnet), arsenopyrite, bertrandite, beryl, biotite, calcite, cassiterite, columbite, cookeite, elbaite (tourmaline), fluorapatite, goethite, graftonite, heterosite, hydroxyl-herderite, microcline, montmorillonite, muscovite, pyrite, quartz (colorless, milky, smoky), schorl (tourmaline), sphalerite, triphylite.

Comments: Some of the best hydroxyl-herderite crystals from Maine have been collected at this quarry, as well as good crystals of bertrandite and smoky quartz. Perham (1964) gave a detailed account of the minerals found in crystal pockets at the Waisanen Quarry during feldspar mining operations in 1963.

Directions: *Driving:* From jct. of Rtes. 117 and 118 in Norway, go west on Rte. 118 for 0.95 mile. Turn right onto Greenwood Road and drive northwest 5.30 miles. Turn right onto Richardson Hollow Road and continue 0.40 mile to parking area on right.

Walking: Walk downhill on woods road 0.15 mile to water-filled quarry pit on right and nearby dump. Tamminen Quarry is 0.10 mile farther (uphill) on same trail.

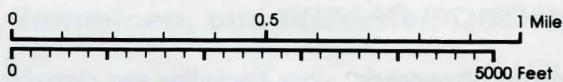


Locality #21: Witt Hill Chrysoberyl Locality

Town: Greenwood, Oxford County

Base map: West Paris 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Site is believed to be open for collecting unless otherwise posted.

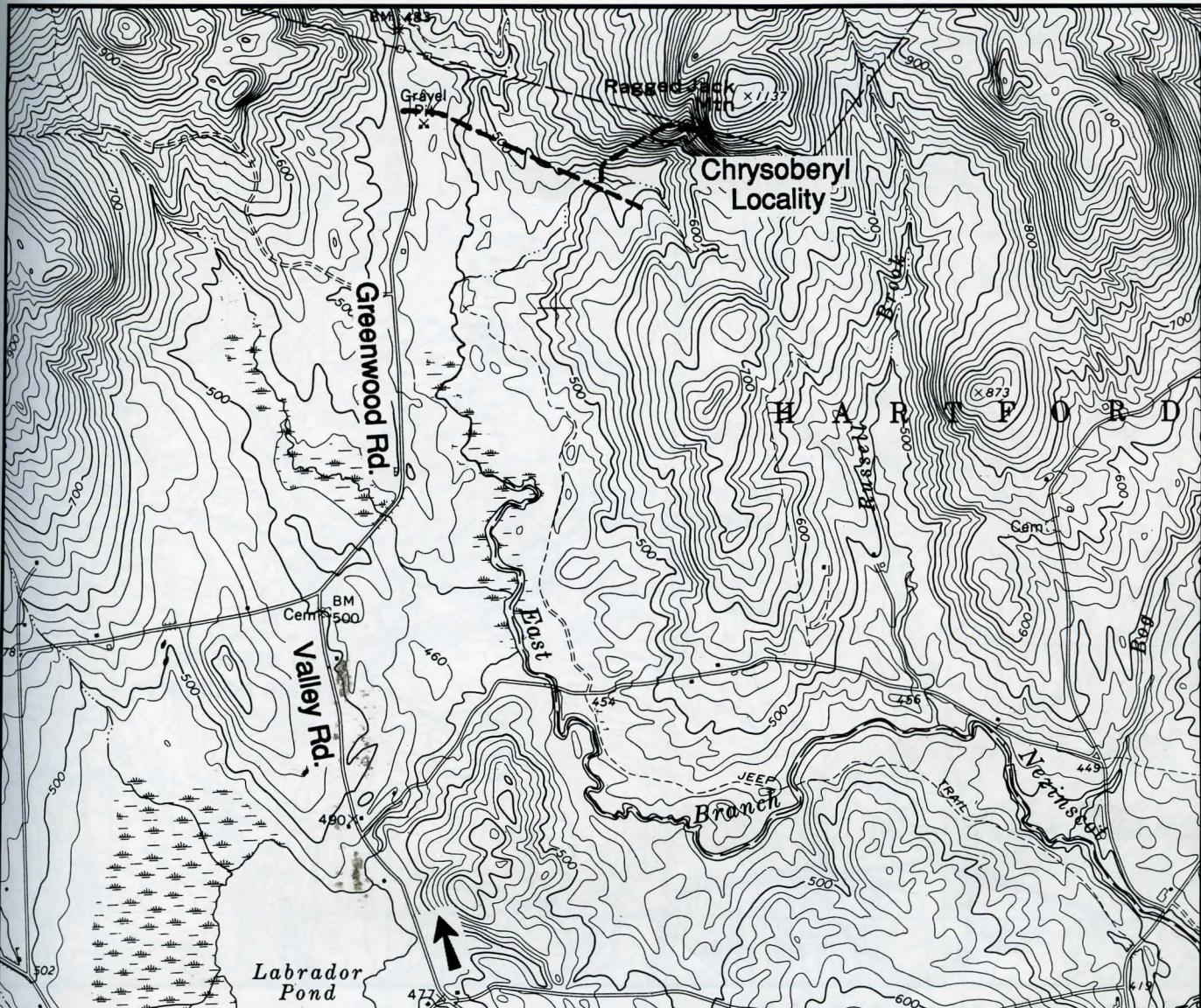
Minerals observed: albite, almandine (garnet), autunite/meta-autunite, biotite, chrysoberyl, gahnite, microcline, muscovite, quartz, schorl (tourmaline), sillimanite, torbernite/metatorbernite, zircon.

Comments: Small but well-formed chrysoberyl crystals (both single and twinned) have recently been collected here. An unusual characteristic of the pegmatite is the presence of fibrous white sillimanite. This locality and other chrysoberyl occurrences in Maine were listed by Jacobson (1982). It has also been described by Jacobson (1987). The exact location of the Witt Hill site continues to be a source of confusion, due in part to the proximity of the Greenwood-Norway town line. Although the location shown on our map is believed to be correct, there may

be other chrysoberyl occurrences closer to the summit of Witt Hill.

Directions: *Driving:* From jct. of Rtes. 117 and 118 (west of Norway village), go 0.80 mile east on Rte. 117. Turn left onto Crockett Ridge Road and drive north 3.10 miles to where road forks. Keep right at fork and follow road another 3.10 miles to point where it becomes impassable (just past house on right). Park here.

Walking: Continue north along old road for about 300 feet to where road forks. Keep left at fork and proceed on woods road approximately 2200 feet, until reaching point where stone wall on left side of road bends sharply to left (northwest). There is a large birch tree next to wall at this point. Follow stone wall to left, keeping on left side of wall, to swampy area (350 feet from road). Continue straight through swamp to low ridge (650 feet from road). Schorl occurs in ledge 50 feet left (south) of wall. Walk south along ridge for 400 feet to chrysoberyl locality.

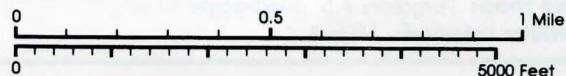


Locality #22 : Ragged Jack Mountain Chrysoberyl Locality

Town: Hartford, Oxford County

Base map: Worthley Pond 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Open for collecting. Permission not required, but use extreme caution around cliff. Owners: Mr. and Mrs. Bruce White, Rte. 6-A, Box 1867, Orleans, Massachusetts 02653 (508-255-9204).

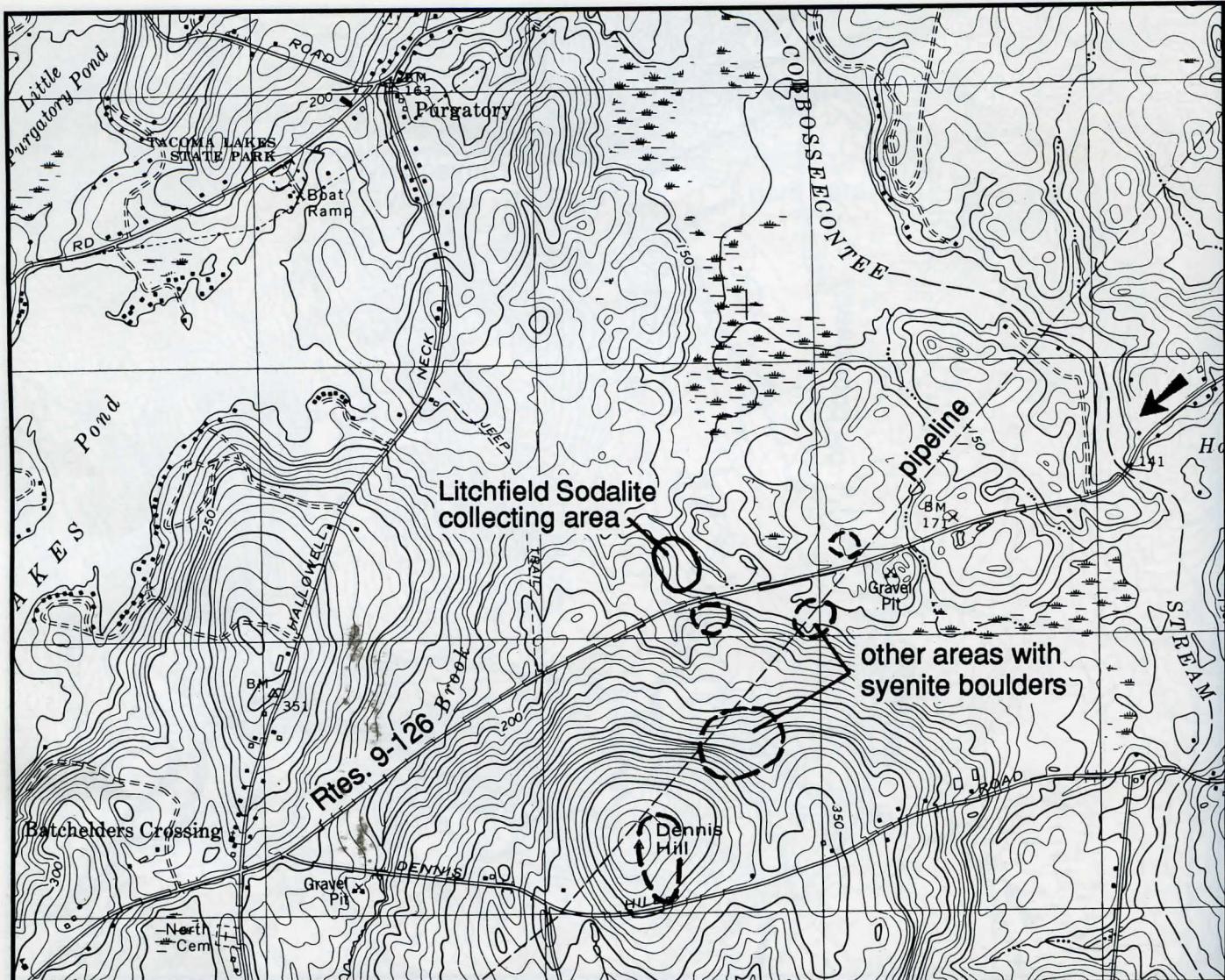
Minerals observed: almandine (garnet), chrysoberyl, fluorapatite, microcline, muscovite, quartz, schorl (tourmaline), zircon.

Comments: This locality is included largely because of its historical interest. Good twinned crystals of chrysoberyl have been found in the pegmatite vein on the cliff face, as well as schorl crystals and large almandine crystals. *This location is not recommended for children or anyone not in good physical condition.* A moderately strenuous hike is required to reach the site, and collecting conditions are hazardous on the cliff and talus pile. However, it is possible that specimens of chrysoberyl may still

be found in the talus boulders. This locality and other chrysoberyl occurrences in Maine were described by Jacobson (1982).

Directions: Driving: From jct. of Rtes. 219 and 140 in East Sumner, drive west 2.10 miles on Rte. 219. Turn right onto Valley Rd. and drive north 1.45 miles to four-way jct. Valley Rd. turns to gravel at this point. Continue north on Valley Rd. an additional 1.10 miles to Greenwood Rd. (paved). Proceed north on Greenwood Rd. for 1.05 miles, and turn right onto gravel woods road (note "Dillon" sign at jct.). Follow this road east, through several small gravel pits, for 0.60 mile and park at turnout on left. Note: it may be necessary to walk this last 0.60 mile if a gate has been installed at entrance to woods road.

Walking: Enter woods and walk north-northeast for about 300 feet (100 paces) along crest of low ridge. A poorly marked trail may be evident here. Go 930 feet (310 paces) northeast, diagonally up the western slope of Ragged Jack Mtn. Then walk about 420 feet (140 paces) east to the talus pile at the base of the cliff.

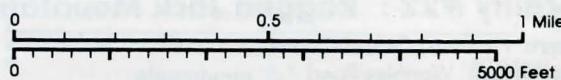


Locality #23: Litchfield Sodalite Locality

Town: Litchfield, Kennebec County

Base map: Purgatory 7.5' quadrangle

Contour interval: 10 feet



Type of deposit: Glacially transported boulders, eroded from a local nepheline syenite intrusion.

Collecting status: Believed to be open for collecting unless otherwise posted. Area includes property belonging to several people.

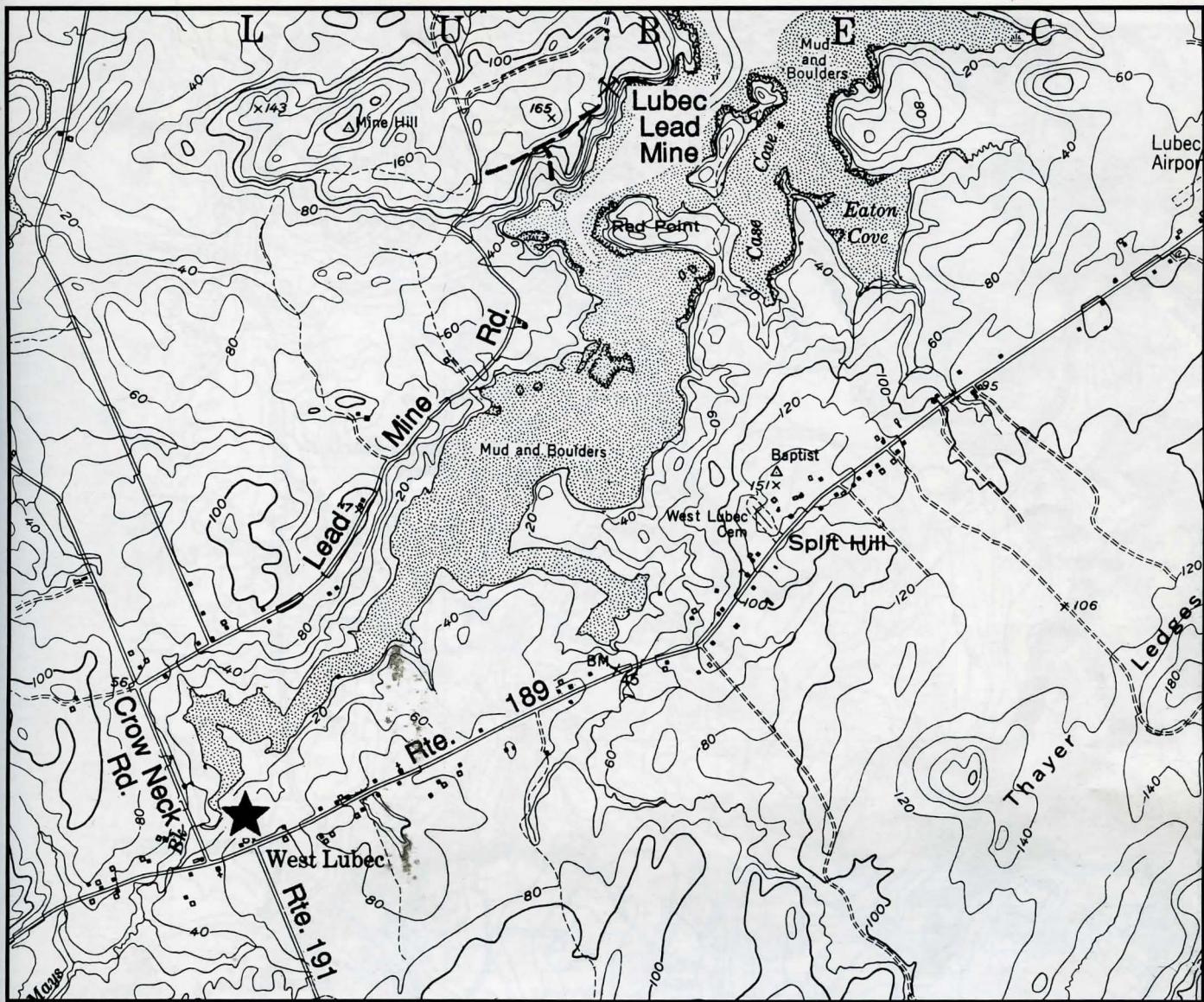
Minerals observed: aegirine-augite, albite, annite, astrophyllite, "biotite", cancrinite, chrysoberyl, corundum, fluorapatite, "hydronephelite" (a mixture of natrolite, gibbsite, and diaspore), magnetite, nepheline, sodalite, yellow-brown unknown mineral around cancrinite, zircon.

Comments: This locality is best known for its sodalite and cancrinite specimens ("litchfieldite" is a name applied to the rock in which they occur). The sodalite is blue and usually occurs as small patches in the syenite, but larger masses (some with rough crystals of yellow cancrinite) are occasionally found. Exceptional zircon crystals to 1 inch in size have been collected in

recent years. Directions are given for one of the better collecting sites, but coarse syenite boulders are also found in the other areas shown on the location map, as well as the vicinity of Spears Corner in West Gardiner (just east of the map area). There are very few -- if any -- presently exposed outcrops of the nepheline syenite. It is concealed by glacial sediments. Barker (1965) reported amphibole, magnetite, microcline, pyroxene, titanite, and other minerals in the various rock types comprising the syenite body.

Directions: Driving: From overpass where Rtes. 9-126 cross Rte. I-95 in West Gardiner, drive west 4.95 miles on Rtes. 9-126 to small stream on right. (You will cross a pipeline right-of-way at 4.55 miles from I-95.) Park.

Walking: Walk north, perpendicular to road and keeping to left of small stream, for about 600 feet. Syenite boulders are found in this area, on side of low hill with pine trees. Heavy hammers will be useful here.

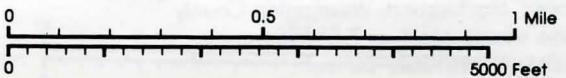


Locality #24: Lubec Lead Mine

Town: Lubec, Washington County

Base map: West Lubec 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Metal-sulfide ore deposit.

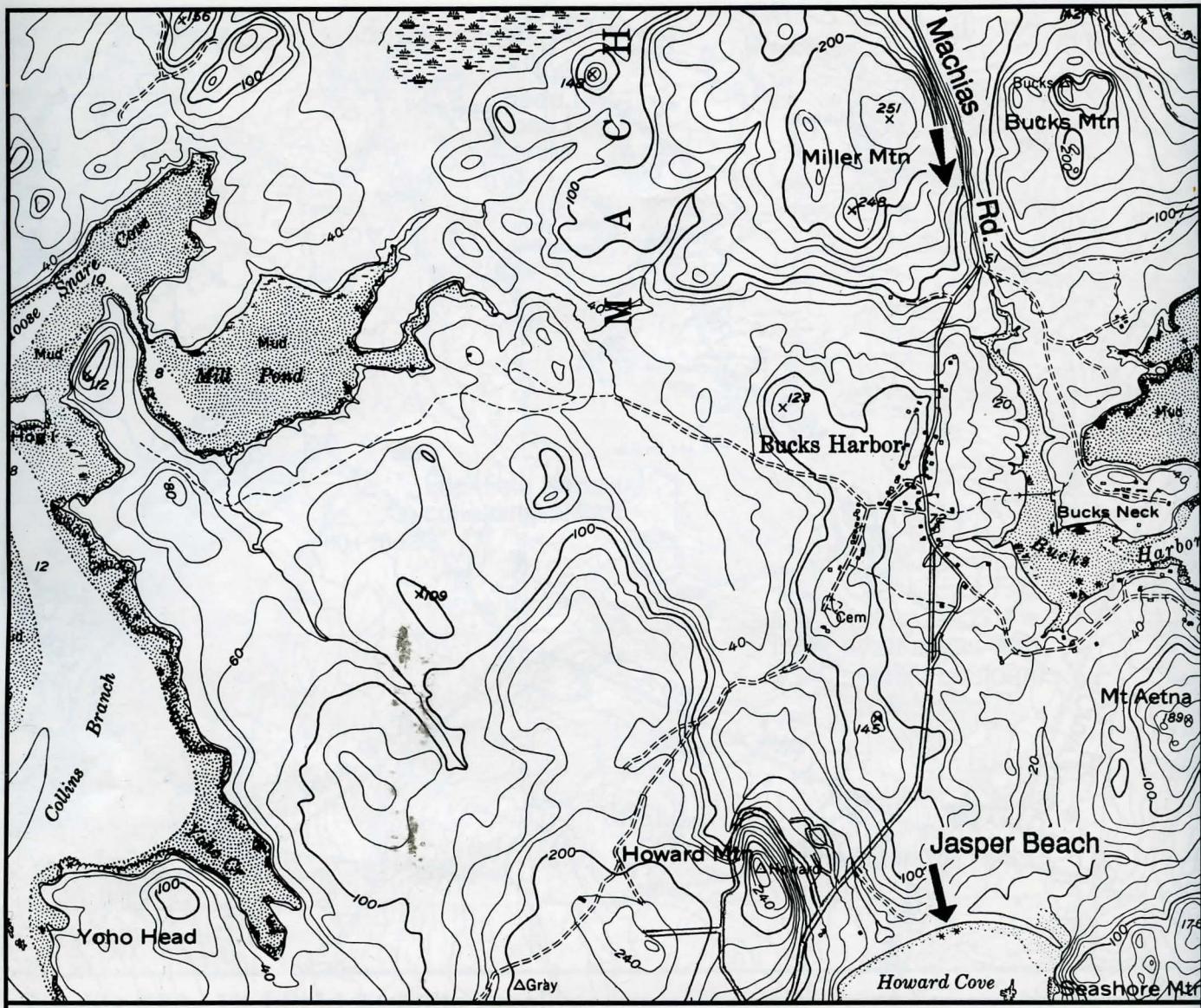
Collecting status: Inquire locally. Site reportedly has been open for collecting, but the mine area is said to have been recently subdivided.

Minerals observed: acanthite(?), anglesite, aurichalcite, bismuth(?), bornite, calcite, cerussite, chalcopyrite, dolomite, epidote, galena, goethite, hematite, hemimorphite, limonite, linarite, malachite, pyrite, pyrolusite(?), pyromorphite, pyrrhotite, romanechite(?), quartz, smithsonite, sphalerite, titanite, wulfenite.

Comments: Good specimens of galena and sphalerite have been found here in recent years. This locality has been in existence since the early 1800's, and was described in the first published geological survey of Maine (Jackson, 1837). Young (1963) gave a detailed description of the site.

Directions: Driving: From jct. of Rtes. 189 and 191 in West Lubec, go west 0.10 mile on Rte. 189. Turn right (north) on Crow Neck Road and drive 0.45 mile. Turn right onto Lead Mine Road and proceed 1.65 miles. Park on left side of road and follow gravel road that turns right (to ocean shore). This road can be driven by trucks.

Walking: Walk about 800 feet (toward shore) to clearing on left, where obscure mine road starts. Follow mine road, which turns into a footpath, being careful to keep to right where trail forks. Watch out for cliffs in mine area! Alternatively, walk down main access road to cove. Collecting is best in dumps along shoreline below mine, and in small dumps in woods on right (downhill) side of access road. Shoreline route should be taken only at low tide, so check tide tables in advance of trip.

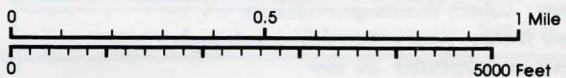


Locality #25: Jasper Beach

Town: Machiasport, Washington County

Base map: Machias 7.5' quadrangle

Contour interval: 20 feet

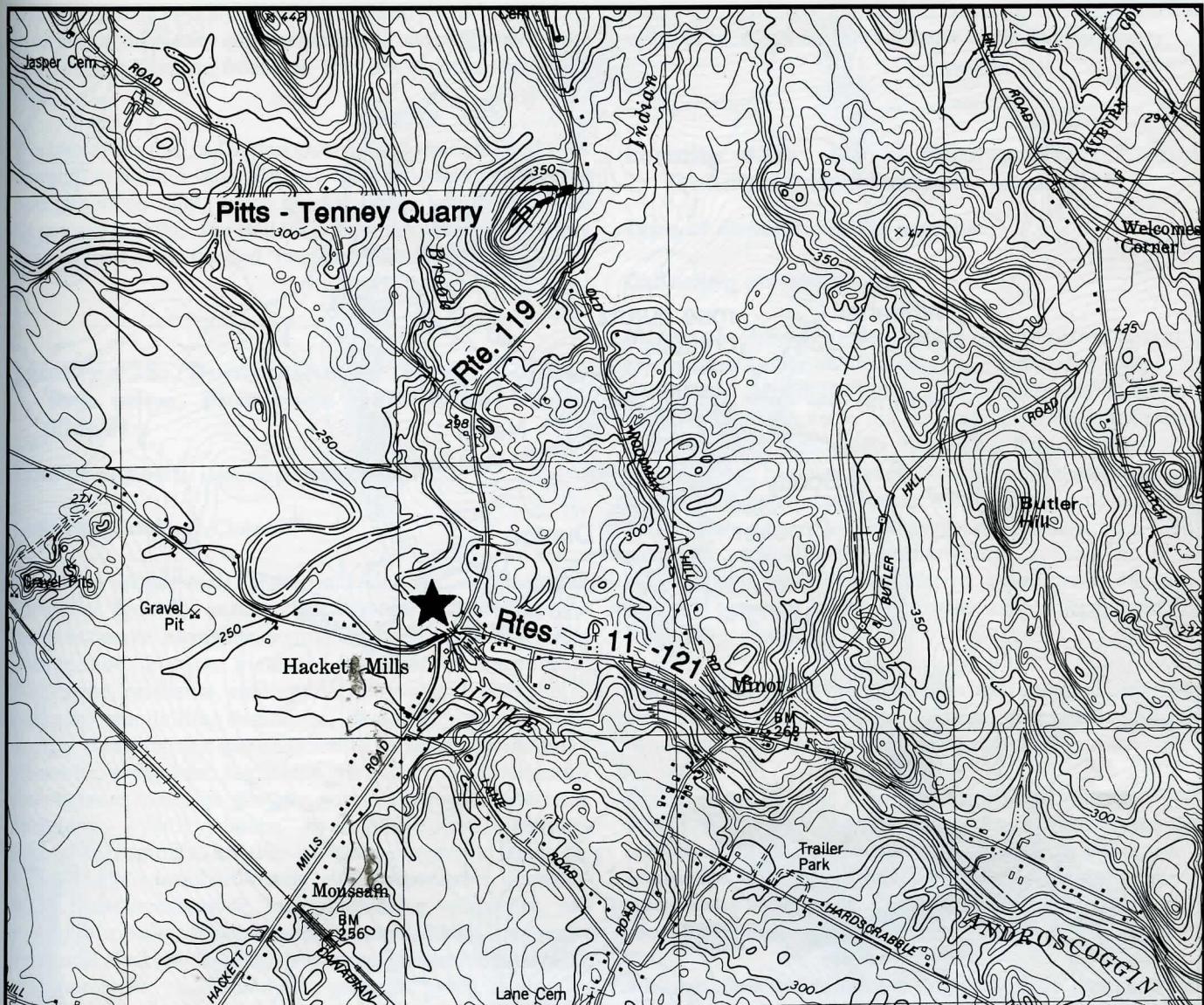


Type of deposit: Beach gravel derived from volcanic rock.

Collecting status: Open to public. Managed by Jasper Beach Fund, c/o Machias Savings Bank, Machias, Maine 04654.

Minerals observed: Reddish volcanic rocks (resembling jasper) in a variety of attractive colors and patterns.

Directions: Driving: From jct. of U.S. Rte. 1 and Rte. 92 in Machias village, drive southeast 9.65 miles on Rte. 92 (Machias Road), passing through Machiasport and Bucks Harbor. Turn left on gravel road and proceed 0.20 mile to parking area, from which a short walk brings you to the beach.

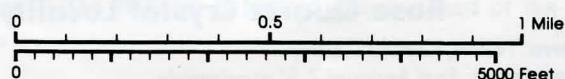


Locality #26: Pitts - Tenney Quarry (Pitts Garnet Mine)

Town: Minot, Androscoggin County

Base map: Minot 7.5' quadrangle

Contour interval: 10 feet



Type of deposit: Calc-silicate minerals in metamorphic rock.

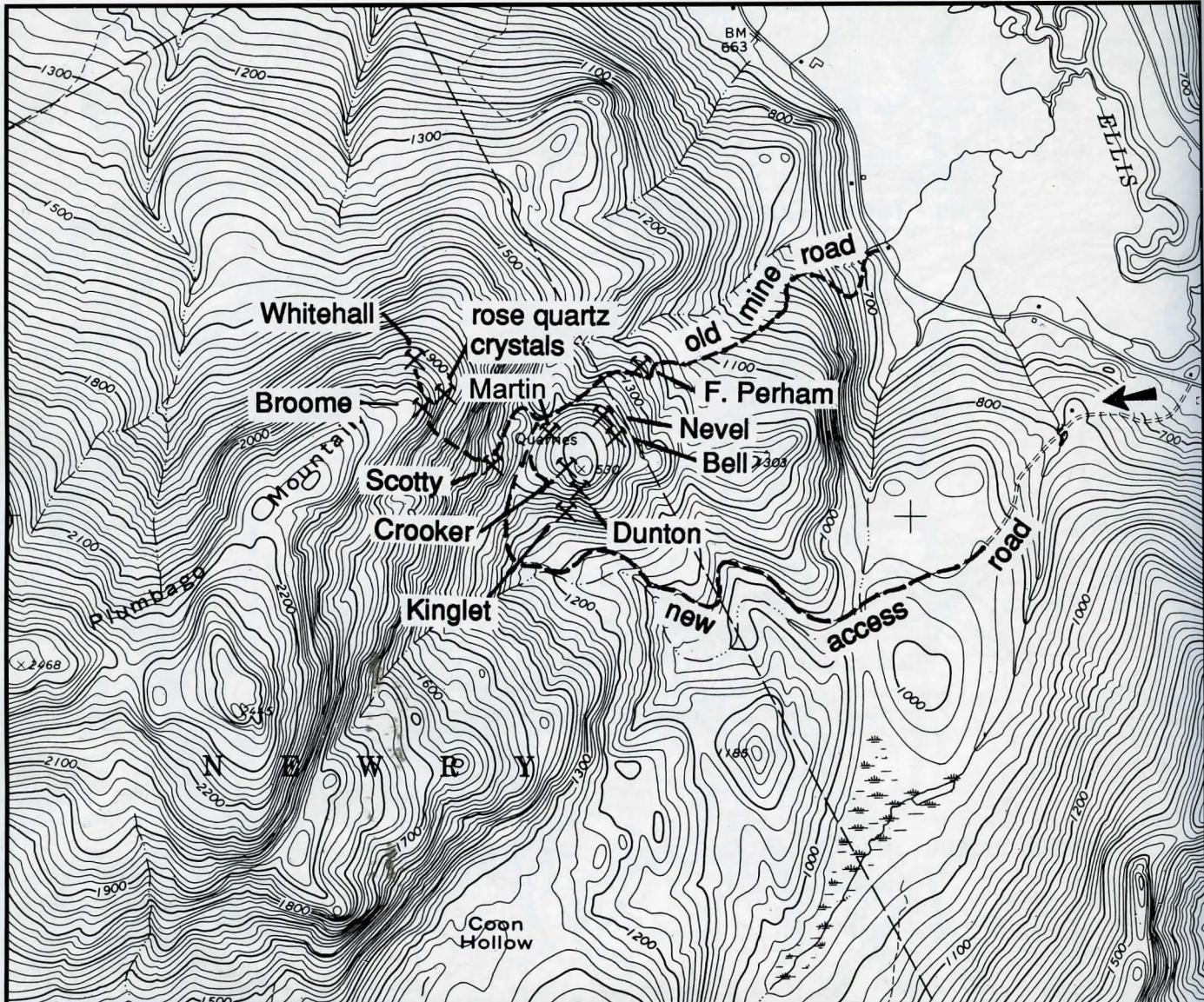
Collecting status: Open for collecting. Permission generally not required, but only hand tools are allowed here. Contact: Arthur Gary (207-892-8648) or Howard Gary (207-998-2577).

Minerals observed: actinolite, calcite, clinochlore, clinozoisite, diopside, grossular (garnet), meionite (scapolite group), molybdenite, quartz, titanite, vesuvianite. At small prospect pit in pegmatite, located to right of access road 100 feet before reaching garnet quarry: beryl, columbite, feldspar, muscovite, quartz, schorl (tourmaline).

Comments: The Pitts - Tenney Quarry is famous for its orange grossular garnet crystals (Shaub, 1957). Crystals 3-4 inches in diameter were once found in clusters up to 3 feet across. Most specimens are only partial crystals, which protrude from seams in the host rock. A small percentage of complete crystals have also been found. These were darker-colored and surrounded by quartz. Heavy hammers are required to break the very hard rock at this locality.

Directions: *Driving:* From jct. of Rtes. 11-121 with Rte. 119 (west of Minot village), drive north on Rte. 119 for 1.10 miles to woods road on left. Park at entrance to this road.

Walking: Follow woods road uphill (keep left at fork) for about 600 feet to prospect pits.

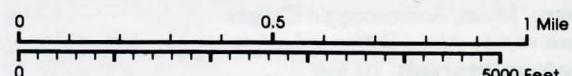


Localities #27, 28, 29, & 30: Newry Quarries (Bell Pit, Dunton & Nevel Quarries, Rose Quartz Crystal Locality)

Town: Newry, Oxford County

Base map: East Andover 7.5' quadrangle

Contour interval: 20 feet



Locality #27: Bell Pit

Type of deposit: Granite pegmatite.

Collecting status: Closed.

Minerals observed: actinolite, albite (including var. cleavelandite), almandine (garnet), arsenopyrite, augelite, autunite/meta-autunite, beraunite, bertrandite, beryl, beryllonite, brazilianite, carbonate-fluorapatite, cassiterite, columbite, diadochite, dravite (tourmaline), eleonorite, eosphorite, fairfieldite, fluorapatite, fluorite, goethite, gorceixite, goyazite, greenockite, hematite, heterosite, hydroxylapatite, hydroxyl-herderite, jahnsite-(CaMnFe), jahnsite-(CaMnMn), laueite, ludlamite, magnetite, messelite, microcline, mitridatite,

montebrasite, moraesite, muscovite, perhamite, petalite, phosphophyllite, pyrite, quartz, rhodochrosite, rockbridgeite, ro-scherite group, schoonerite, schorl (tourmaline), siderite, souzalite, sphalerite, spodumene, strunzite, switzerite-metaswitzerite, torbernite-metatorbernite, triphylite, uraninite, vivianite, wardite, whitlockite, whitmoreite, wurtzite(?), zircon. (List updated from King, 1975.)

Comments: The geology of the Newry pegmatites has been described in detail by Shainin and Dellwig (1955) and Barton and Goldsmith (1968). The Bell Pit is noted for its variety of rare phosphate minerals (King, 1980).

Directions: Driving: From jct. of U.S. Rte. 2 with Rte. 5 (west of Rumford), drive 3.25 miles north on Rte. 5. Turn left and drive or walk uphill on gravel access road (road conditions may vary

greatly with time of year). Proceed to highest part of access road, in vicinity of the Newry quarries (see map), and park where space is available. Distance from Rte. 5 to this point is about 2.35 miles.

Walking: Pass trail to Dunton Quarry (a sharp right) and walk downhill to north a short distance (past the Martin Quarry) to next turnoff on right, which quickly brings you to the Nevel Quarry and Bell Pit. The Bell Pit is the small water-filled quarry just southeast of the flooded "twin tunnels" of the Nevel Quarry.

Locality #28: Dunton Quarry (Nevel tourmaline mine, Plumbago gem mine, Hall's Ridge)

Type of deposit: Granite pegmatite.

Collecting status: Closed.

Minerals observed: albite (including var. cleavelandite), almandine (garnet), anatase, arsenopyrite, autunite/meta-autunite, beraunite, bermanite, bertrandite, beryl, beryllonite, beta-uranophane, biotite, bismuth, brazilianite, carbonate-fluorapatite, cassiterite, chalcopyrite, chrysoberyl, clarkeite(?), cookeite, crandallite, damourite, diadochite, dickinsonite, dravite (tourmaline), earlshannonite, elbaite (tourmaline), eleonorite, eosphorite, fairfieldite, ferrostrunzite, fluorapatite, fourmarierite, francolite, goethite, goyazite, hematite, heterosite, hureaulite, hydroxylapatite, hydroxyl-herderite, jahnsite-(CaMnFe), kaolinite, kivuite, landesite, laueite(?), lepidolite, löllingite, magnesiohornblende, mangangordanite, manganese(?), manganocolumbite, manganotantalite, microcline, microlite, mitridatite, montebrasite, montmorillonite, moraesite, muscovite, opal (var. hyalite), parsonsrite, perhamite, petalite(?), phosphosiderite, phosphuranylite, pollucite, pyrite, quartz (including rose quartz crystals), reddingite(?), rhodochrosite, rockbridgeite, romanechite, roscherite, rutherfordine, rutile, schoonerite, schorl (tourmaline), scorzalite(?), siderite, sphalerite, spodumene, stewartite, strengite, strunzite(?), switzerite/metaswitzerite, todorokite, torbernite/metatorbernite, triphyllite, triploidite, uralolite, uraninite, uranophane, ushkovite, vandendriesscheite, vanmeerscheite, vivianite, wardite, whitlockite, wodginite, wölsendorfite, xanthoxenite, zircon (var. cyrtolite). (List updated from King, 1975.)

Comments: This quarry is world-famous for its green, pink, blue, and "watermelon" tourmaline crystals, especially the large crystal pockets opened in 1972. Many rare minerals have also been found here. See articles by King (1975), McCrillis (1975), and Francis (1985). King (1975) and Perham (1987) summarized the history of the quarry.

Directions: *Driving:* From jct. of U.S. Rte. 2 with Rte. 5 (west of Rumford), drive 3.25 miles north on Rte. 5. Turn left and drive or walk uphill on gravel access road. Proceed to highest part of access road, in vicinity of the Newry quarries (see map), and park where space is available. Distance from Rte. 5 to this point is about 2.35 miles.

Walking: Take sharp right turn off the main access road and walk uphill to southeast for short distance to the Dunton Quarry.

Locality #29: Nevel Quarry (Twin Tunnels Quarry, United Feldspar Quarry)

Type of deposit: Granite pegmatite.

Collecting status: Closed.

Minerals observed: albite, almandine (garnet), arsenopyrite, autunite/meta-autunite, bertrandite, beryl, bis-muthinite, carbonate-fluorapatite, cassiterite, columbite, cookeite, dickinsonite(?), dravite (tourmaline), elbaite (tourmaline), eosphorite, fairfieldite, fluorapatite, fluorite, gainesite, galena, goethite, hematite, heterosite, hydroxyl-herderite, laueite, lepidolite, magnesiohornblende, microcline, microlite, mitridatite, montebrasite, muscovite, pyrite, pyrolusite, quartz, rhodochrosite, rockbridgeite, romanechite, roscherite, schorl (tourmaline), siderite, sphalerite, spodumene, tapiolite, triphyllite, uraninite, vivianite, wardite, zircon (list updated from King, 1975, 1980).

Comments: Much spodumene has been collected here. Other finds include well-formed crystals of montebrasite, large masses of columbite, and purple fluorapatite crystals.

Directions: *Driving:* From jct. of U.S. Rte. 2 with Rte. 5 (west of Rumford), drive 3.25 miles north on Rte. 5. Turn left and drive or walk uphill on gravel access road. Proceed to highest part of access road, in vicinity of the Newry quarries (see map), and park where space is available. Distance from Rte. 5 to this point is about 2.35 miles.

Walking: Pass trail to Dunton Quarry (a sharp right) and walk downhill to north a short distance (past the Martin Quarry) to next turnoff on right, which quickly brings you to the Nevel Quarry. The Bell Pit is located just southeast of the Nevel Quarry.

Locality #30: Rose Quartz Crystal Locality

Type of deposit: Granite pegmatite.

Collecting status: Closed.

Minerals observed: albite (including var. cleavelandite), almandine (garnet), beryl, brazilianite(?), carbonate-fluorapatite, cassiterite, columbite, cookeite(?), crandallite, eosphorite, fairfieldite, fluorapatite, goethite, goyazite, hematite, heterosite, hydroxylapatite, hydroxyl-herderite, microlite, montebrasite, moraesite, muscovite, opal (var. hyalite), pyrite, quartz (including rose quartz crystals), roscherite group, schorl (tourmaline), siderite, sphalerite, spodumene, strunzite, tapiolite, triphyllite, uraninite, wardite, wodginite, zircon. (List updated from King, 1975.)

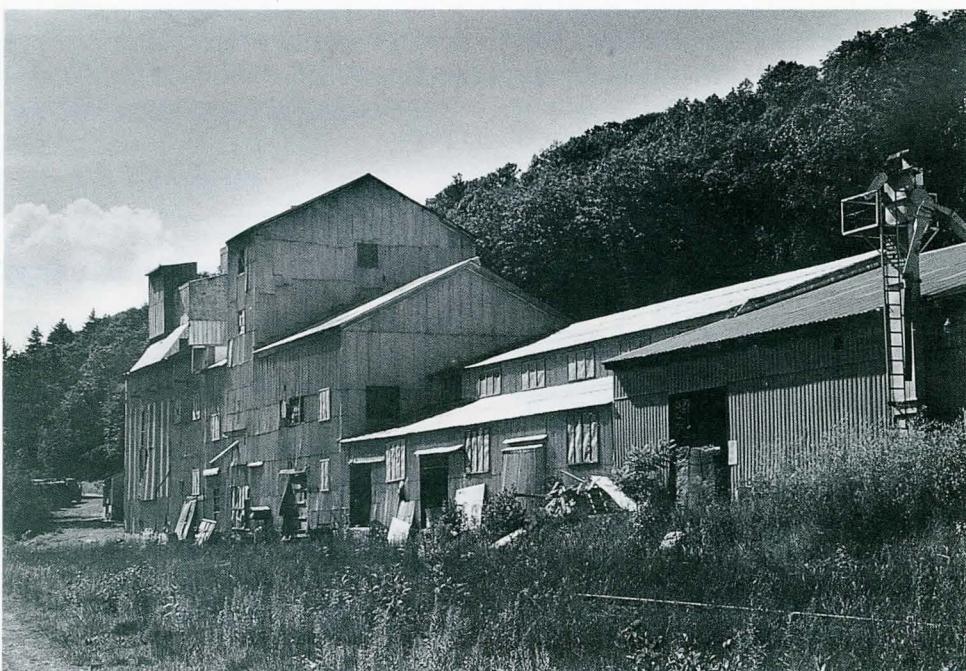
Directions: *Driving:* From jct. of U.S. Rte. 2 with Rte. 5 (west of Rumford), drive 3.25 miles north on Rte. 5. Turn left and drive or walk uphill on gravel access road. Proceed to highest part of access road, in vicinity of the Newry quarries (see map), and park where space is available. Distance from Rte. 5 to this point is about 2.35 miles.

Walking: Walk downhill to north, toward turnoff for Nevel Quarry and Bell Pit. Before reaching this turnoff, take a faint

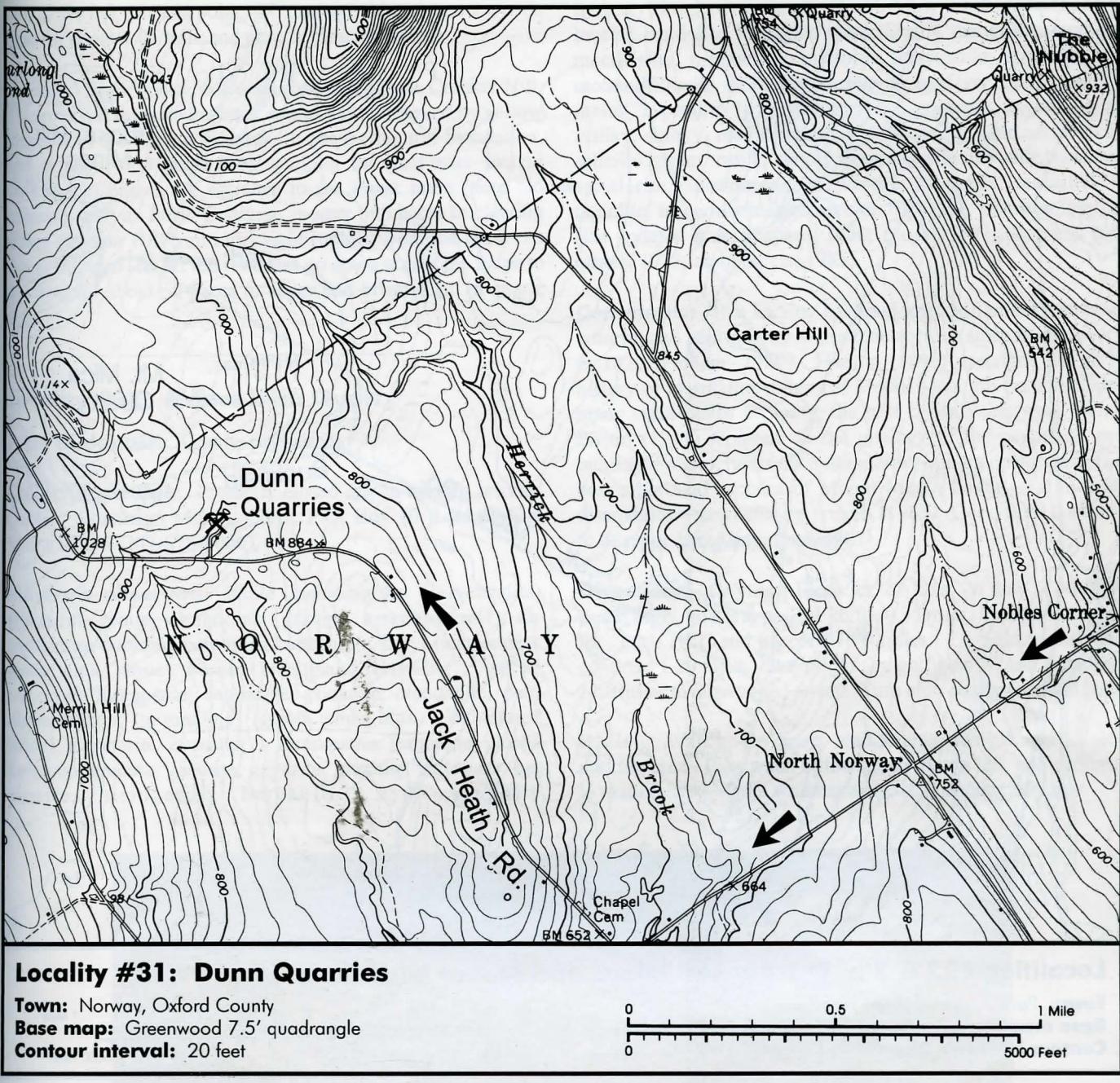
trail to the left and follow it to the Scotty Quarry on the southeast flank of Plumbago Mtn. Locate vertical shaft on right-hand side of quarry (facing hill) and follow trail leading from shaft about 1,300 feet up the steep hillside to Broome Quarry on ridge crest. Walk north across ledge to small quarry pit on north side of ledge. Continue north through woods a short distance to old road, and follow this road downhill (right) about 500 feet to a fork. Trail to right goes to rose quartz crystal area (150 feet from fork). Continuing straight on old road will bring you to the Whitehall Quarries. Caution: This is a difficult hike!



Feldspar mining operation at the Tamminen Quarry, Greenwood, 1952. Note trays loaded with feldspar, next to derrick (see p. 43). *Photo by Neil Wintringham.*



The feldspar mill in West Paris, constructed in 1925 for the Oxford Mining and Milling Company, was important in the development of the feldspar industry in Oxford County. The mill was inactive when this photo was taken (1990). *Photo by Woodrow B. Thompson.*

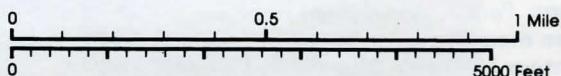


Locality #31: Dunn Quarries

Town: Norway, Oxford County

Base map: Greenwood 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

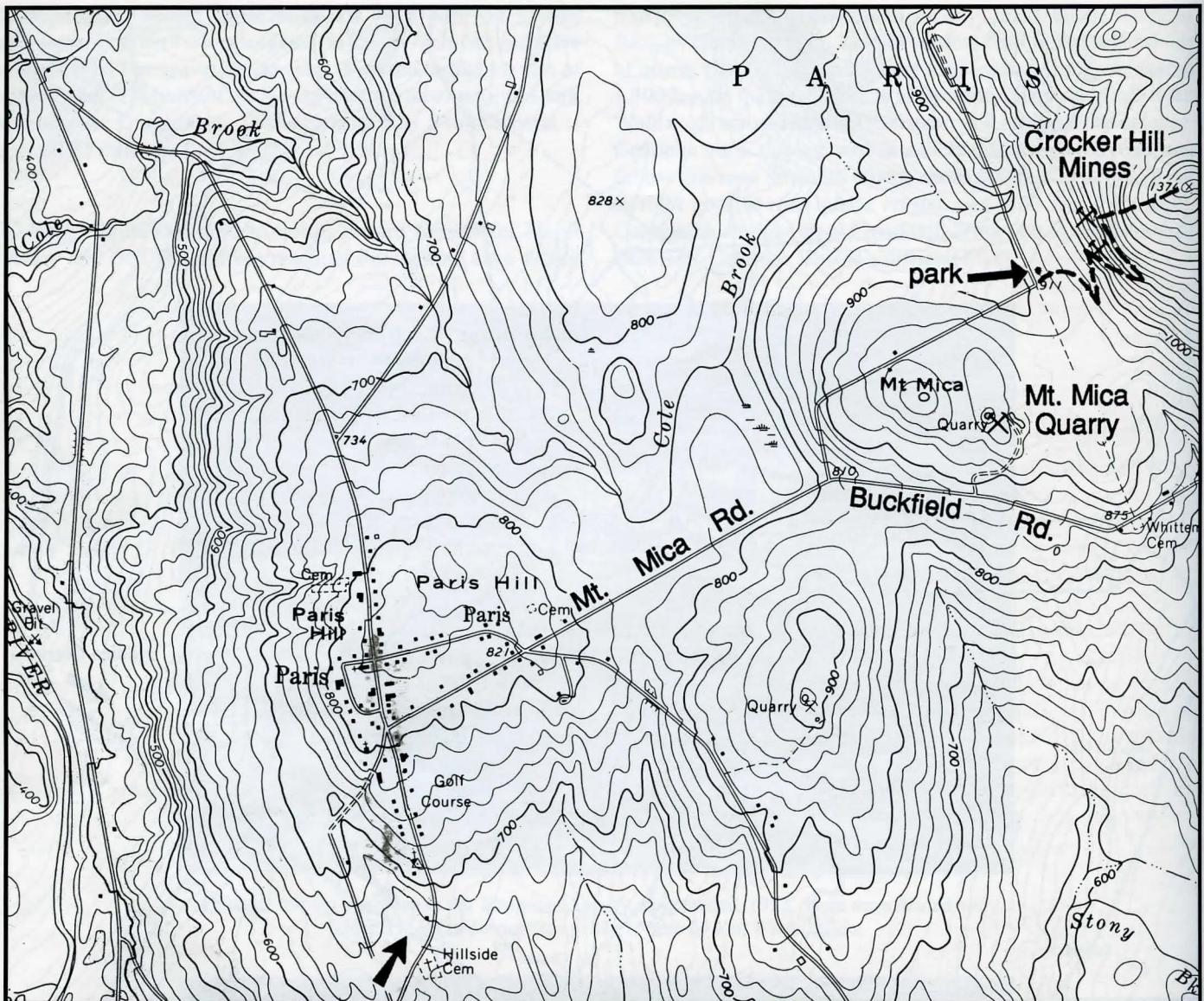
Collecting status: The quarry dumps are open for collecting on a fee basis, by appointment only (generally on weekends, but call to inquire). Contact Paul Janson at 207-527-2033.

Minerals observed: albite (feldspar), almandine (garnet), beryl, biotite, columbite, fluorapatite, microcline (feldspar), muscovite, pyrrhotite, quartz (milky, rose, smoky), schorl (tourmaline).

Comments: Beryl crystals and rose quartz are among the more desirable minerals found here. This old locality has recently

been opened to collectors, and it is likely that other interesting mineral species will be found.

Directions: Driving: From jct. of Rtes. 117 and 118 in Norway, go west on Rte. 118 for 0.95 mile. Turn right onto Greenwood Road and drive northwest 3.30 miles to four-way jct. at Nobles Corner. Turn left and continue 1.45 miles, passing through North Norway. Turn right onto Jack Heath Rd. (no street sign) and drive 1.50 miles to the Janson residence on right (driveway goes uphill, across road from church). Go up driveway, past house, and park in lower field, just past the first field on left. The dumps of the lower quarry will be seen near the parking area.

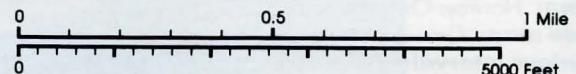


Localities #32 & 33: Crocker Hill Mines and Mount Mica Quarry

Town: Paris, Oxford County

Base map: West Paris and West Sumner 7.5' quadrangles

Contour interval: 20 feet



Locality #32: Crocker Hill Mines

Type of deposit: Quartz vein, possibly in a fault zone.

Collecting status: Located in a Paris town park. Permission to collect minerals probably is not required, as long as the sites are not greatly disturbed. The collecting information provided here is for the upper mine, which is the more productive locality. The lower mine (next to Crocker Hill trail) is a collapsed underground working, and is mainly of historical interest. *No digging should be done at the latter site.*

Minerals observed: graphite, molybdenite(?), pyrite, quartz (colorless to milky, singly and doubly-terminated crystals), sericite.

Comments: The foundation of an old mill can be seen next to the lower mine, on the downhill side of the trail. This is

believed to be the molybdenite mine that was mentioned by Morrill and others (1958). If so, the upper mine is the "gold mine" indicated on Morrill's map, and his map shows the Crocker Hill mines in the wrong locations. It is not known whether a significant amount of ore was produced by either mine. Hess (1908) and Waterman (1931) noted the occurrence of graphite here, and Waterman stated that both graphite and molybdenite were recovered by the mining operation. Large masses of interlocking quartz crystals occur at the upper mine, and terminated crystals can be found in cavities in the quartz.

Directions: Driving: From jct. of Rtes. 26 and 117-119 in South Paris, go north on Rte. 26 for 0.35 mile. Turn right at sign for "Paris Hill" and proceed 1.20 miles. Go right at fork and continue 1.20 miles. Turn right (by golf course) onto Mt. Mica Rd. and drive northeast 1.15 miles. Turn left onto gravel road and proceed 0.80 mile to point where road makes a right-angle

turn to the left. At this point, drive straight ahead onto a woods road for about 0.05 mile and park in clearing on left.

Walking: Walk uphill on woods road that climbs Crocker Hill. This road has three switchback curves, and is marked by yellow blazes after the first switchback. It passes the mill foundation, and at about 665 paces from parking lot (just after second switchback) passes the entrance to the lower mine (note old retaining wall on left). Continue another 500 paces to clearing where Crocker Hill trail turns right (uphill) from the road. At this point, turn left off the road and go down across the ledge to the west for about 60 paces to upper end of small pit in quartz vein.

Locality #33: Mount Mica Quarry

Type of deposit: Granite pegmatite.

Collecting status: Presently closed due to mining activity. Owner: Plumbago Mining Corp., P.O. Box 10, Locke Mills, Maine 04255 (207-875-3060).

Minerals observed: albite (including var. cleavelandite), alluaudite group, almandine (garnet), arsenopyrite(?), autunite/meta-autunite, beraunite, bertrandite, beryl (aquamarine, green, pink, white), biotite, brazilianite, brookite(?), calcite, carbonate-fluorapatite, cassiterite, cookeite, crandallite, damourite, elbaite (tourmaline) (green, pink, blue, multicolored, white), eosphorite, evansite(?), fluorapatite, francolite, gainesite-group, glucine, goethite, goyazite, graphite, halloysite, heterosite, hisingerite, hureaulite, hydroxylapatite,

hydroxyl-herderite, jahnsite-(CaMnMn), kaolinite, kosnarite, laueite, lepidolite, löllingite, manganite(?), manganocolumbite, mccrillisite, microcline, microlite, mitridatite, montebrasite, montmorillonite, moraesite, muscovite, opal (var. hyalite), palermoite(?), petalite(?), phosphuranylite, pollucite, pyrite, quartz (milky, smoky, rose crystals), rhodochrosite, romanechite, ro-scherite group, rutile, schorl (tourmaline), scorodite, siderite, sphalerite, spodumene, stewartite, strunzite, tantalite(?), tapiolite, torbernite/metatorbernite, triphylite, uraninite, zircon (list updated from Shepard, 1830; Bastin, 1911; Morrison and others, 1973; and Francis, 1985).

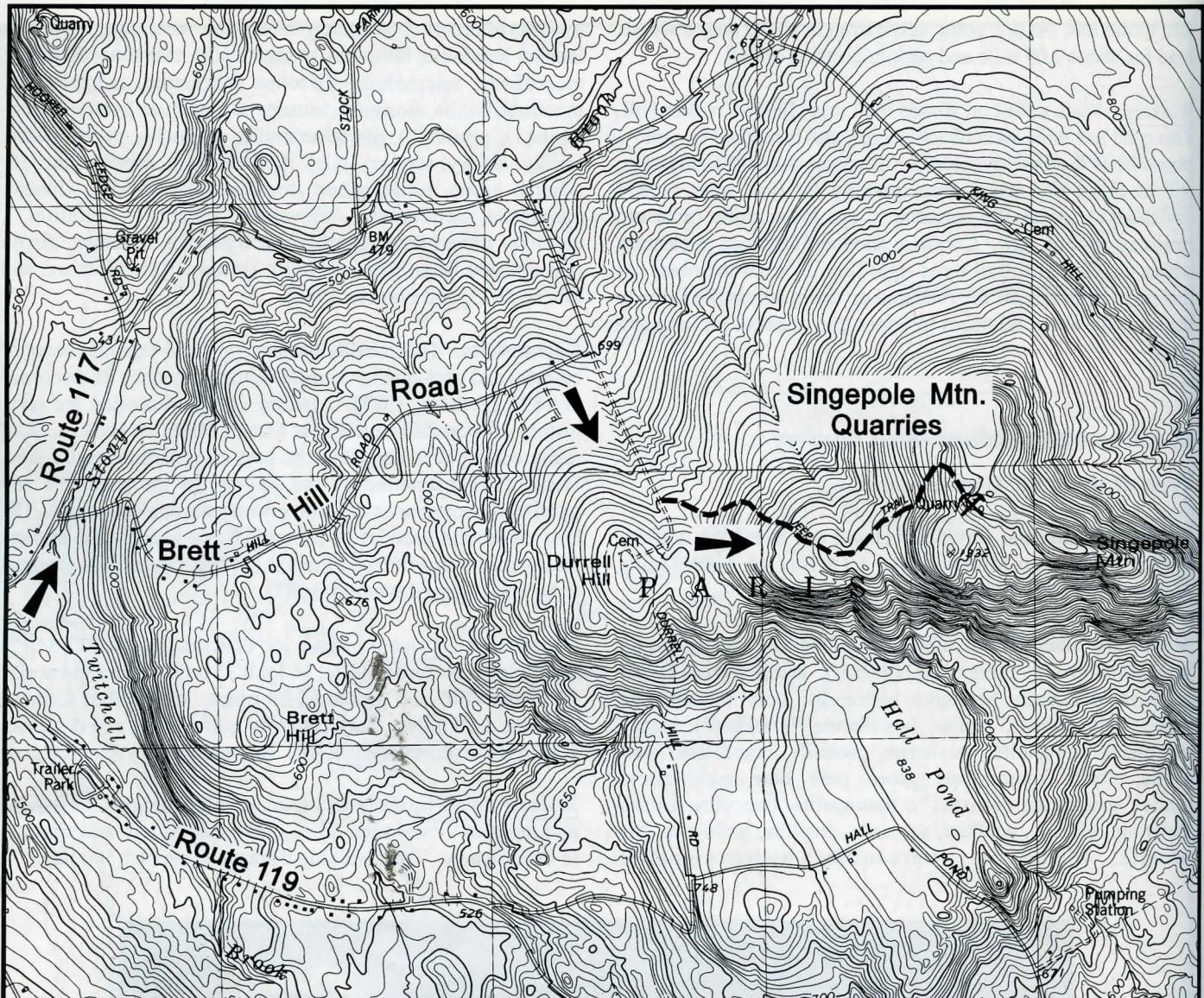
Comments: This locality has been a world-famous source of colorful and gem-quality tourmaline crystals since its discovery in 1820 (Perham, 1987). Hamlin (1895) described the early history of tourmaline mining at Mount Mica; his book includes many color plates depicting the best crystals that were found. Bastin (1911) reported on the geology of the pegmatite and published photographs of contemporary mining operations. The best all-around account of Mount Mica's history and mineral discoveries was written by Francis (1985). Good finds continue to be made here (Raymond, 1987).

Directions: Driving: From jct. of Rtes. 26 and 117-119 in South Paris, go north on Rte. 26 for 0.35 mile. Turn right at sign for "Paris Hill" and proceed 1.20 miles. Go right at fork and continue 1.20 miles. Turn right (by golf course) and drive east 1.50 miles to quarry road on left. Turn onto quarry road and park.

Walking: Walk up the quarry road, keeping to right after leaving parking area. Pass water-filled quarry pit on left, and continue to main quarry. Total walking distance is about 1,500 feet.



Tourmaline mining at Mount Mica by Plumbago Mining Corporation, 1991. Photo by Woodrow B. Thompson.

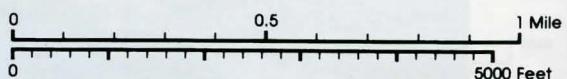


Locality #34: Singepole Mountain Quarries

Town: Paris, Oxford County

Base map: Oxford 7.5' quadrangle

Contour interval: 10 feet



Type of deposit: Granite pegmatite.

Collecting status: Area is open for recreational hiking and mineral collecting. Permission not required. Owner: Hebron Academy, Hebron, Maine.

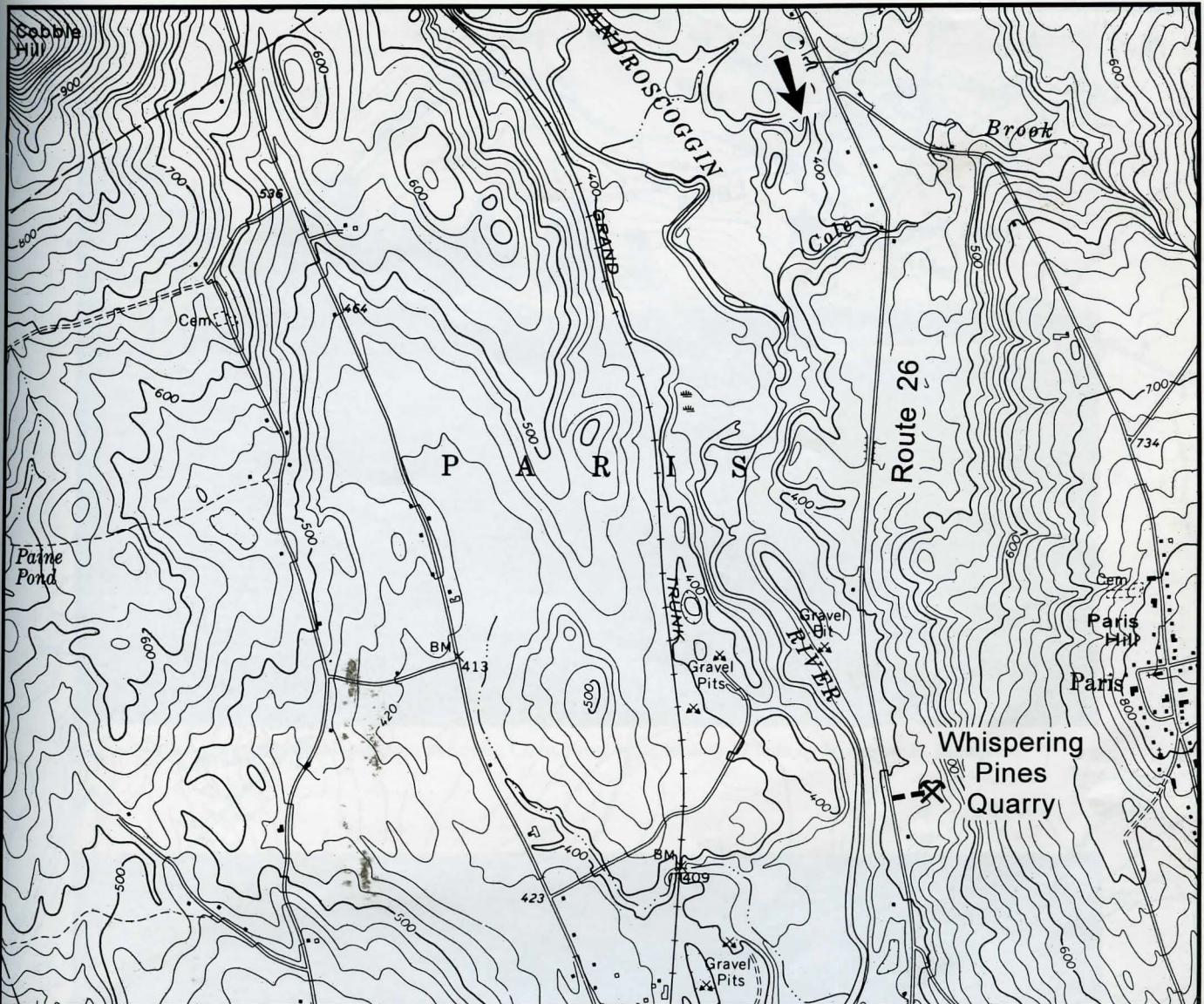
Minerals observed: almandine (garnet), beryl, biotite, fluorapatite, microcline (feldspar), muscovite, quartz, schorl (tourmaline).

Comments: Few unusual minerals have been reported from these quarries, but the view from the open ledges is worth the

hike. Nice glacial polish can be seen in several places on the pegmatite ledges.

Directions: *Driving:* From jct. of Rtes. 117 and 119 in South Paris, drive 0.60 mile toward Buckfield on Rte. 117. Turn right onto Brett Hill Road and go east 1.50 miles to jct. Turn right and drive 0.40 mile southeast on woods road. Turn left and park (do not block trail).

Walking: Walk east on Singepole Mtn. trail (dirt road) for 1800 paces (about 5400 feet). Keep to left at all forks along the way. Trail first crosses a false summit (open ledges), then goes back into woods and climbs to main summit ridge.

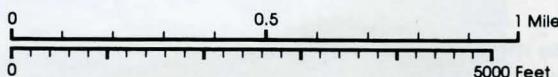


Locality #35: Whispering Pines Quarry

Town: Paris, Oxford County

Base map: West Paris 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

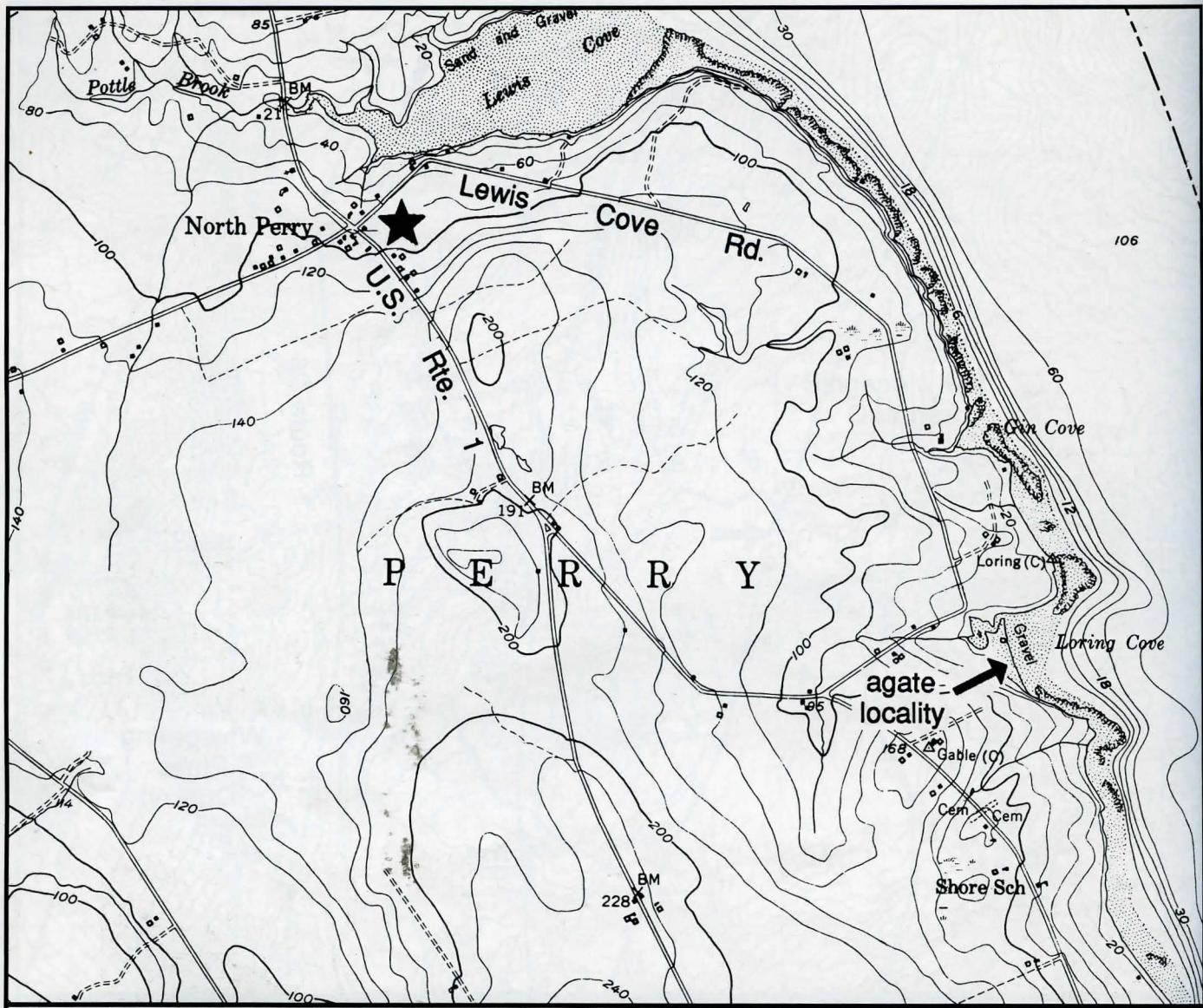
Collecting status: Open for collecting; permission not required. Owner: Perham's of West Paris, West Paris, ME 04289 (207-674-2341).

Minerals observed: albite (feldspar), almandine (garnet), arsenopyrite, biotite, chrysoberyl, microcline (feldspar), muscovite, quartz (milky, rose, smoky), schorl (tourmaline).

Comments: Many fine rose quartz gems have been cut from material mined at this locality. A large and very lustrous crystal of black tourmaline from the Whispering Pines Quarry is on display in the museum at Perham's of West Paris.

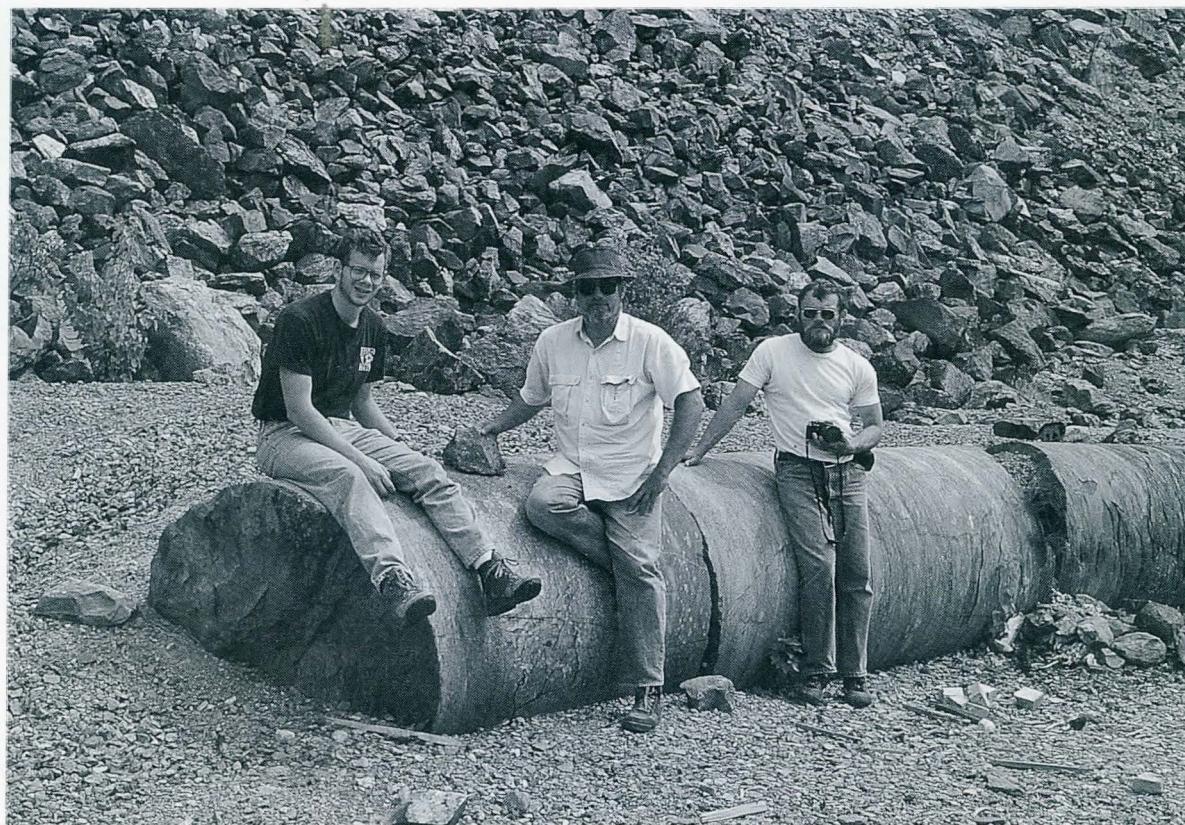
Directions: *Driving:* From the jct. of Rtes. 26 and 219 in West Paris (Perham's store), drive south on Rte. 26 for 5.45 miles. Turn left into parking area for quarry.

Walking: Follow trail uphill to east for 150 paces (about 450 feet) to the quarry.

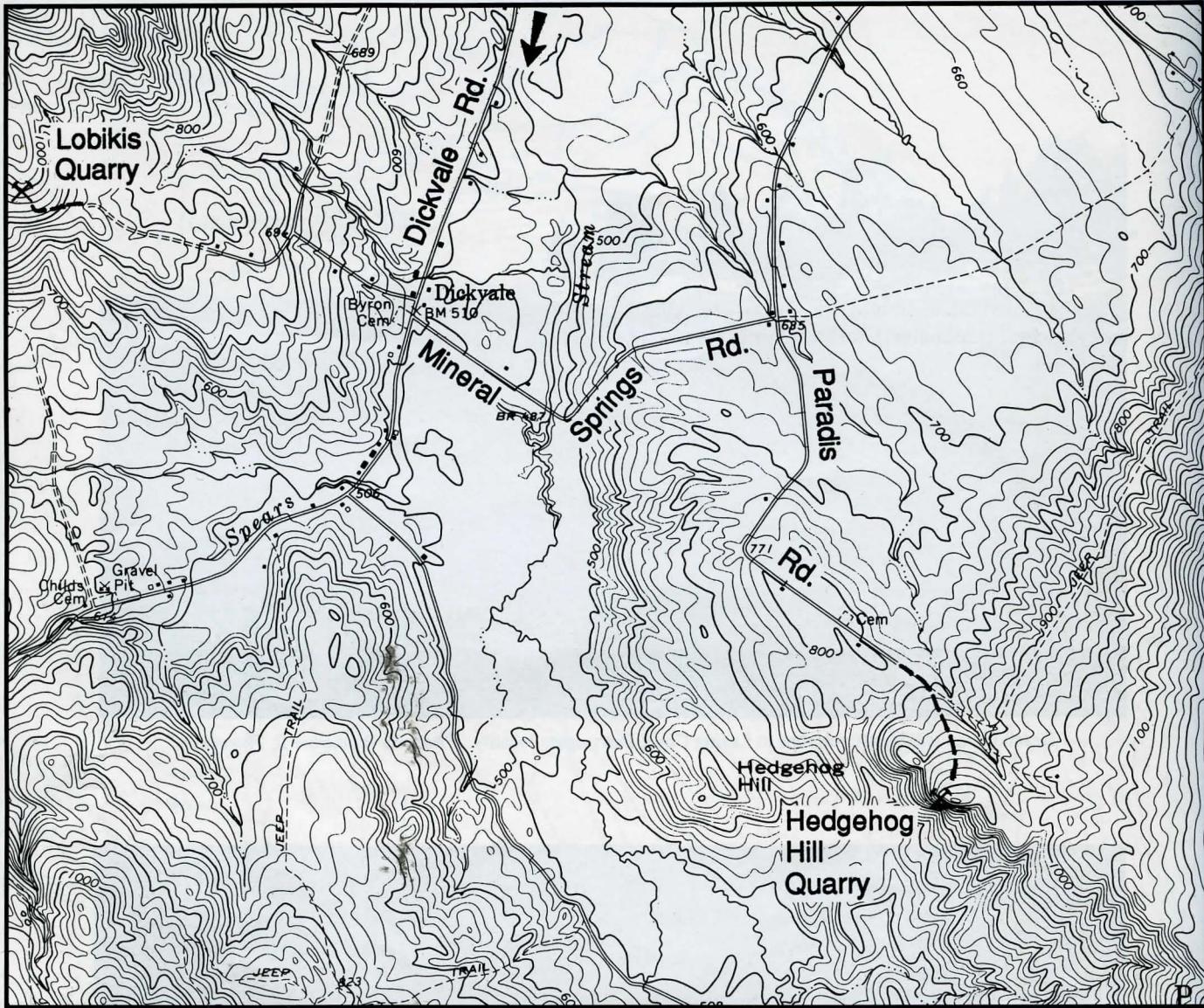




Beach gravel and basalt outcrops in Loring Cove, Perry agate locality. *Photo by Woodrow B. Thompson.*



Giant rock core, Callahan Mine, Brooksville (see p. 30). *Photo by Woodrow B. Thompson.*

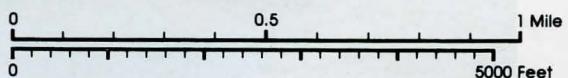


Localities #37 & 38: Hedgehog Hill Quarry and Lobikis Quarry

Town: Peru, Oxford County

Base map: Worthley Pond 7.5' quadrangle

Contour interval: 20 feet



Locality #37: Hedgehog Hill Quarry

Type of deposit: Granite pegmatite.

Collecting status: Open for collecting; permission not required. Mineral rights owned by Oxford County Mineral and Gem Association.

Minerals observed: albite, almandine (garnet), beryl, biotite, chrysoberyl, fluorapatite, microcline, muscovite, quartz (milky, smoky), schorl (tourmaline).

Comments: Many superb almandine garnet crystals to over 1 inch in diameter have been found here. Some of the best ones are surrounded by quartz. Less perfect crystals occur in a granular muscovite matrix, and are marred by intergrowths of the mica.

Directions: Driving: From four-way intersection on Rte. 108 in West Peru (east of Rumford), drive 3.05 miles south on Dickvale Road. Turn left onto Mineral Springs Road and continue 0.95 mile to intersection. Turn right onto Paradis Road (gravel) and drive 1.05 miles to abandoned cabin on left. Park here.

Walking: Continue on main road about 150 feet (50 paces) to quarry road on right. Follow this woods road 270 feet (90 paces) to fork; keep left at fork. Continue 675 feet (225 paces) to next fork; keep right. Walk 390 feet (130 paces) to stone wall. Follow road through opening in wall, and go another 150 feet (50 paces) to end of obvious road. Continue straight ahead on steep downgrade, following trail for 360 feet (120 paces) to quarry.

Locality #38: Lobikis Quarry (Lobikis Mica Mine)

Type of deposit: Granite pegmatite.

Collecting status: Check with the owner: Philip Bretz, Dickvale Road, West Peru, Maine 04290 (home: 207-562-7785; office: 207-364-4355). Call ahead or ask at house (directions given below).

Minerals observed: albite, almandine, beryl, biotite, fluorapatite, heterosite, microcline, muscovite, pyrrhotite, quartz (milky, smoky), schorl (tourmaline), torbernite-metatorbernite, triphylite, vivianite.

Comments: Beryl crystals up to 10 inches long have been found here (Cameron and others, 1954). Some of the beryl is

aquamarine. Well-formed garnet crystals also occur at this locality.

Directions: *Driving:* From four-way intersection on Rte. 108 in West Peru (east of Rumford), drive 3.00 miles south on Dickvale Road. Turn right (west) at Dickvale and drive uphill (keeping to left, on main road) 0.50 mile to owner's house at end of paved road. Continue west on dirt road 0.10 mile to where mine road branches to left. Park at entrance to mine road. Do not block main road.

Walking: Walk about 1650 feet (550 paces) to where old house ruins are seen in bushes on right side of road. Continue about 900 feet (300 paces) west to dumps and quarry pit, which are located on hillside to right of road.



Ray Woodman collecting on the Greenlaw Quarry dump, Mt. Apatite, Auburn (New Year's Eve!, 1994)
(see p. 28). Photo by Woodrow B. Thompson.



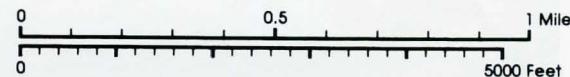
Quarry operator Stephen Welsh (right) at site of gem tourmaline pocket in the Berry Quarry. Photo by Woodrow B. Thompson, 1996.

Locality #39: Berry Quarry

Town: Poland, Androscoggin County

Base map: Minot 7.5' quadrangle

Contour interval: 10 feet



Type of deposit: Granite pegmatite

Collecting status: This quarry is currently being worked. It is open for collecting on certain weekends, by appointment only, for mineral clubs who have field trip insurance for their members (e.g. through the Eastern Federation of Mineralogical and Lapidary Societies). For details, contact Stephen Welsh in Portland, Maine. Phone: (207-761-0408). Note: The Havey Quarry, which is immediately adjacent to the Berry Quarry, is closed to collecting.

Minerals observed: (combined list for Berry-Havey quarry group) albite (feldspar), almandine (garnet), arsenopyrite, autunite, bertrandite, beryl (blue, green, yellow, pink), biotite, cassiterite, cookeite, cryptomelane, dahlite (var. of apatite group), dickinsonite, elbaite (tourmaline; many colors and color combinations), eosphorite, fairfieldite, fluorapatite (blue, pink, colorless, yellow), hureaulite, hydroxyl-herderite, landesite, lepidolite (including zoned mica crystals with lepidolite rims), lithiophilite, manganocolumbite, manganotantalite(?), micro-

cline (feldspar), microlite, mitridatite, montebrasite, montmorillonite, muscovite, phosphosiderite, purpurite, quartz (milky, smoky, rose, colorless), reddingite group, rhodochrosite, rock-bridgeite, schoepite/metaschoepite, schorl, siderite, spodumene, stewartite, strunzite, todorokite, triplite, uraninite, uranophane, wardite, whitlockite, zircon.

Comments: The geology of the Berry Quarry was mapped by Cameron and others (1954). Berman and Gonyer (1930) described the rich mineral assemblage found at this locality. King and Foord (1994) corrected and added to previous listings of mineral species from the Berry-Havey quarry group, and Stephen Welsh (personal communication, 1996) further updated the list included here.

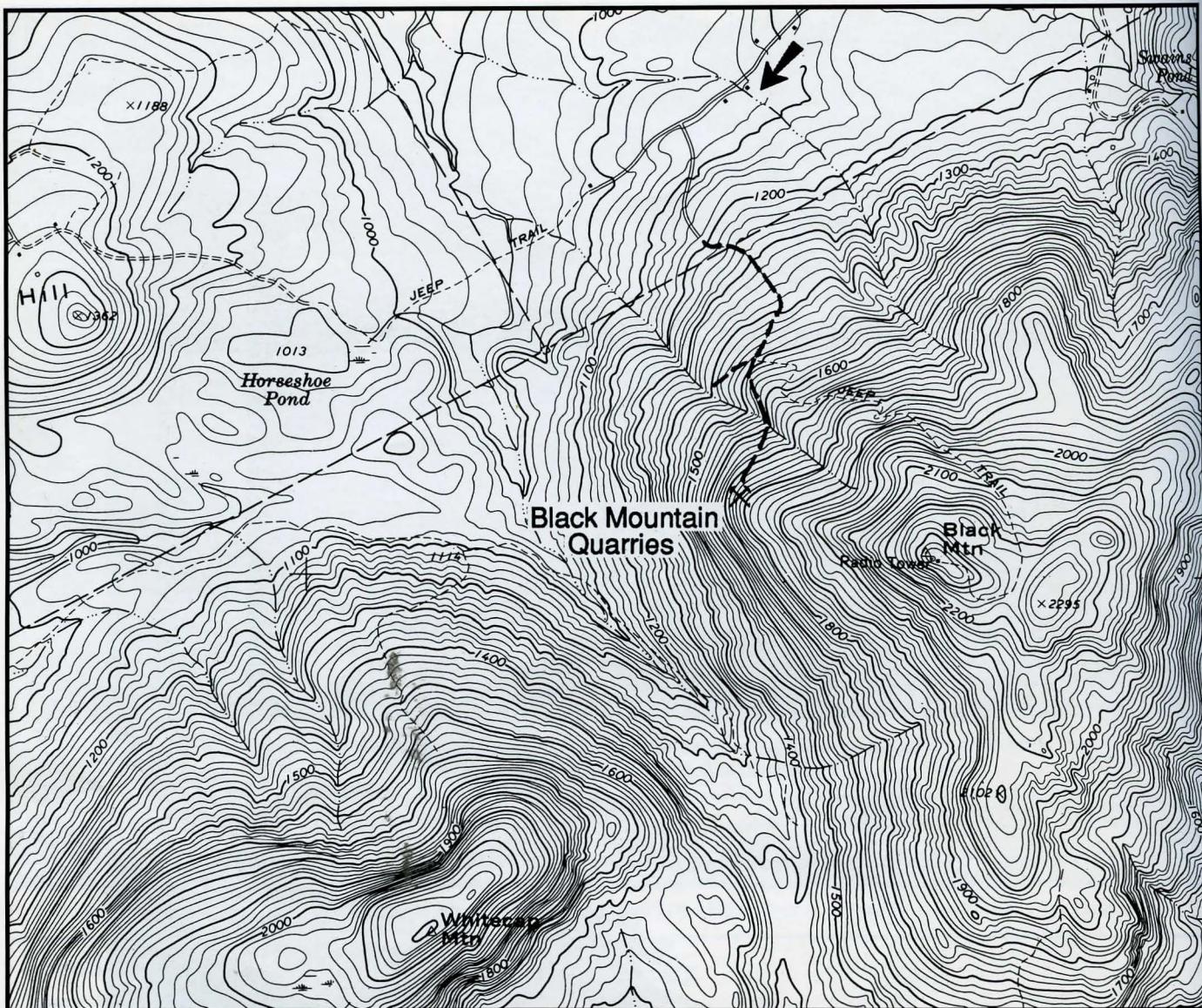
Directions: Since this quarry is actively being worked, the operators have requested that directions to the site are not to be published here. Contact Stephen Welsh at the above phone number for collecting arrangements and directions.



Construction of mill for separation of molybdenite and graphite from gneiss. Crocker Hill, Paris (see p. 54).
Photo by E. S. Bastin, U. S. Geological Survey, 1906.



Completed mill at Crocker Hill Mine, Paris (see p. 54). *Photo by F. L. Hess, U. S. Geological Survey, 1907.*

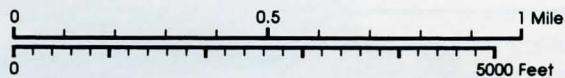


Locality #40: Black Mountain Quarries

Town: Rumford, Oxford County

Base map: East Andover 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Closed. Quarry owned by Joe Martin, Hotel Rumford, 65 Canal St., Rumford, Maine 04276 (207-364-3621).

Minerals observed: albite (including var. cleavelandite), almandine (garnet), amblygonite, autunite/meta-autunite, beryl, beryllonite, carbonate-fluorapatite, cassiterite, cookeite, damourite, dravite (tourmaline), elbaite (tourmaline), eosphorite, fairfieldite, fluorapatite, goyazite, "gummite," heterosite, hurlbutite, hydroxylapatite, hydroxyl-herderite, laueite(?), lepidolite, manganocolumbite, manganese-tantalite, microcline, microlite, mitridatite, montebrasite, montmorillonite, muscovite, opal (var. hyalite), phosphuranylite, pollucite, pyrite, quartz, reddingite(?), rhodochrosite, rockbridgeite, romanechite(?), rosscherite group, schorl (tourmaline), siderite, sphalerite,

spodumene, strunzite, titanite, torbernite/metatorbernite, triphylite, uraninite, uranophane, vivianite, whitlockite, zircon.

Comments: Large amounts of purple lepidolite in the ledge, locally associated with pink tourmaline and white spodumene crystals, provide a striking mineralogical display. Small masses of cassiterite and thin plates of columbite are fairly common in the bladed cleavelandite feldspar. Triphylite, eosphorite, and other phosphates can also be found. The view of nearby Whitecap Mtn. and other western Maine hills makes this one of the most scenic localities in Oxford County. References to the geology and history of the Black Mountain Quarries include Cameron and others (1954), Maillot and others (1949), and Perham (1987).

Directions: Driving: From jct. of U.S. Rte. 2 with Rte. 120 in Rumford, drive north on Rte. 120 for 8.05 miles. Turn left and

follow secondary road (paved at first, and then gravel) southwest for 2.20 miles. Turn left onto another gravel road and drive uphill 0.70 mile to utility pole #J-17. The principal road veers to the left at this point, and a logging trail branches to the right. The road to the quarries goes straight ahead.

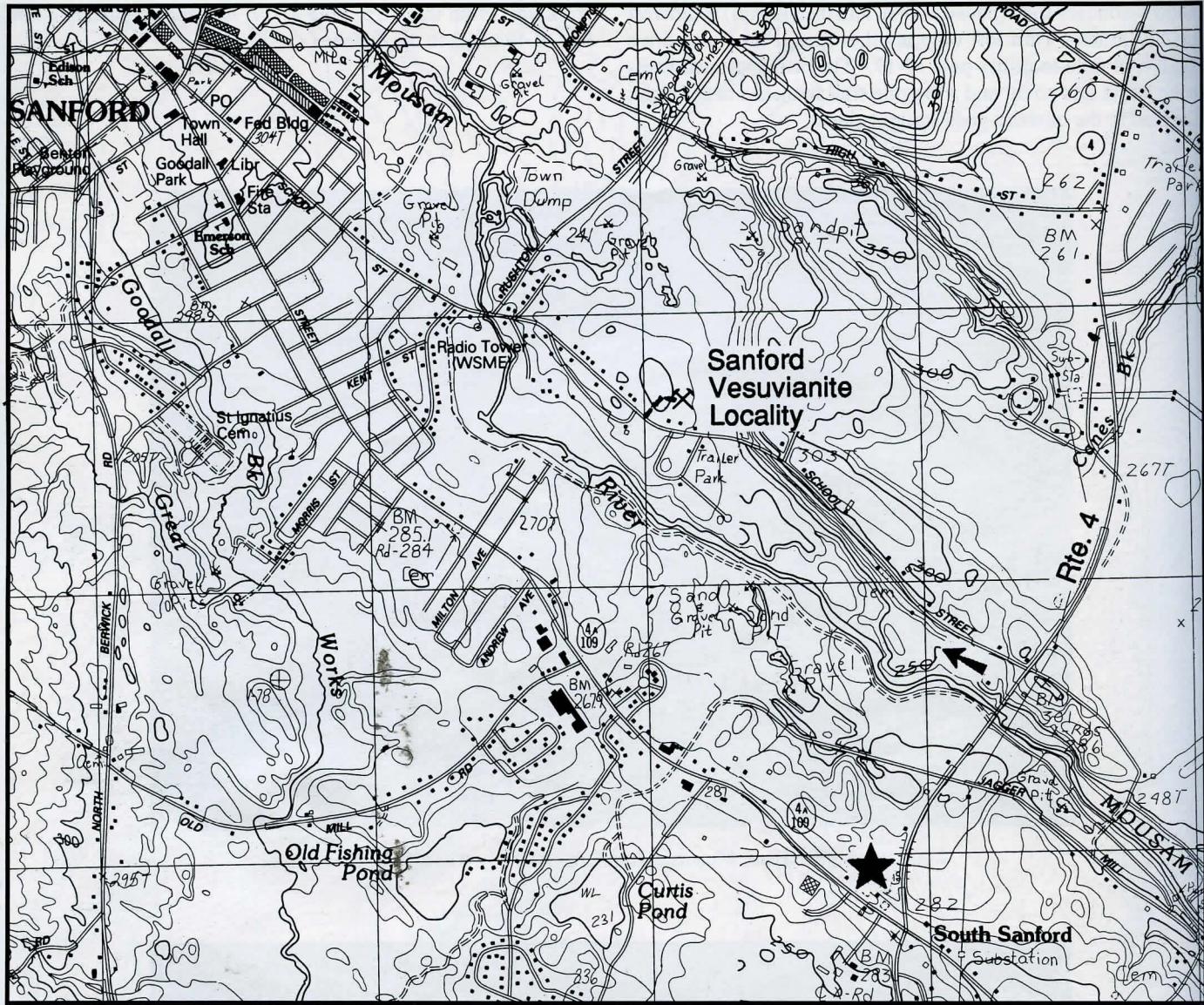
Walking: From the jct. at pole #J-17, it is approximately 2,000 feet (0.40 mile) to the quarries.



Main quarry pit at Black Mountain, Rumford. *Photo by Woodrow B. Thompson.*



Mineralogists examining quarry face at Black Mountain, Rumford, 1991. Note contact between coarse pegmatite and overlying schist in left part of photo. *Photo by Woodrow B. Thompson.*

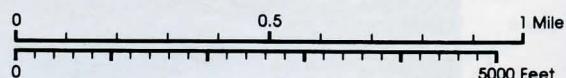


Locality #41: Sanford Vesuvianite Locality (Goodall Farm Prospect; Webster Vesuvianite Prospect)

Town: Sanford, York County

Base map: Sanford and Alfred 7.5' quadrangles

Contour interval: 20 feet (Sanford quad), 10 feet (Alfred quad)



Type of deposit: Calc-silicate minerals in metamorphic rock.

Collecting status: Inquire locally. Site appears to have been open for collecting in recent years.

Minerals observed: andesine, actinolite, calcite, clinozoisite, diopside, fluorite, greenockite, grossular (garnet), meionite (scapolite group), molybdenite, powellite, pyrite, quartz, scheelite, sphalerite, titanite, vesuvianite.

Comments: The Sanford locality is especially noteworthy for its excellent vesuvianite crystals. It is listed as a source of this mineral in Dana's mineralogy textbooks, and was originally

brought to the attention of the scientific community by Prof. J. H. Webster (Harvard Univ.) in an article published in the American Journal of Science in 1848. Leavitt and Leavitt (1993) have provided a recent description of this site. Crystals of vesuvianite and other minerals can often be revealed by using acid to dissolve the surrounding calcite. Beware of the abundant poison ivy in the area.

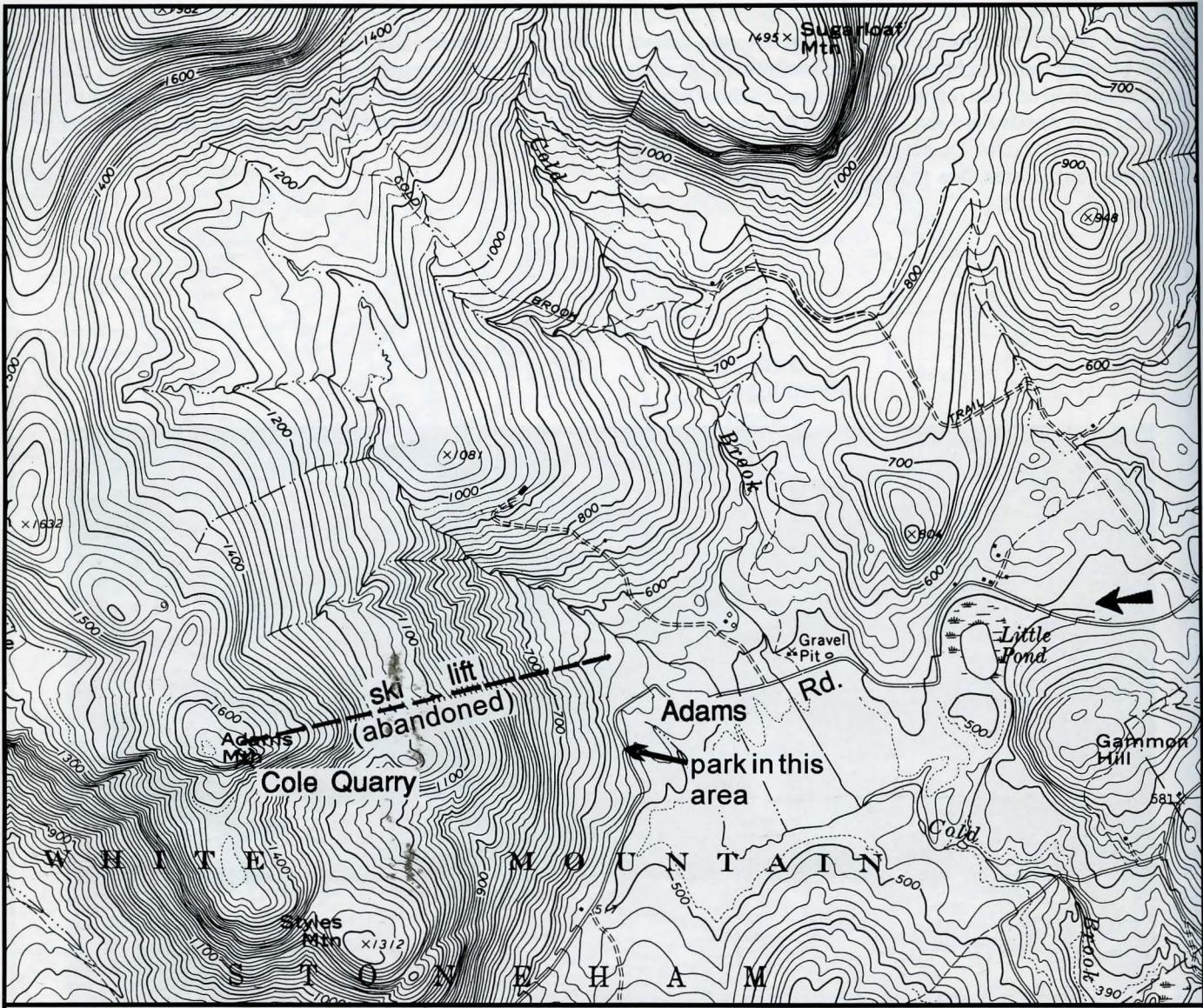
For anyone interested in collecting fluorescent minerals this is an excellent locality. The powellite, scheelite, meionite, titanite, fluorite, and some of the calcite are fluorescent. It is possible to collect cabinet-size specimens that show as many as four different colors under short-wave ultraviolet light. The best area to collect these fluorescent specimens is about 700 feet from the Webster Prospect. Prospect pits are located approximately 700 ft and 2000 ft northeast of the original Webster prospect shown on the map.

Directions: Driving: From the jct. of Rtes. 109 and 4 in South Sanford, go north 0.60 mile on Rte. 4. Turn left onto School Street at blinking traffic light, and proceed northwest 1.05 miles to woods road/trail on right (on wooded section of School Street). Turn right onto woods road and drive north 0.15 mile to small parking area. CAUTION: Do not park on School Street. This is a hazardous traffic area due to hill, curve, and narrow road shoulders.

Walking: From parking area, walk east on trail 100 feet to Webster Prospect. Site consists of small pit and several other prospects over distance of approximately 100 feet. Fluorite, grossular, and meionite occur along exposed contacts between bedrock units, about 700-2000 feet east-northeast of prospect.



The "600-meter pit" at the Sanford vesuvianite locality, so-called because it is located about 600 m northeast of the original Webster prospect. Photo by Duane Leavitt, 1989.

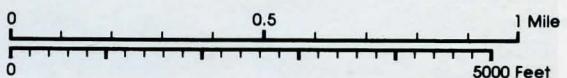


Locality #42: Cole Quarry

Town: Stoneham, Oxford County

Base map: Center Lovell and Speckled Mountain 7.5' quadrangles

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Located in the White Mountain National Forest. No permission is needed to collect minerals here. However, collecting must be noncommercial, done with hand tools, and not greatly disturb the quarry area.

Minerals observed: albite (including var. cleavelandite), almandine (garnet), autunite/meta-autunite, beraunite, beryl, biotite, columbite, diadochite, eosphorite, fairfieldite, fluorapatite, heterosite, hureaulite, ludlamite, microcline, montmorillonite, muscovite, pyrite, pyrrhotite, quartz (milky, smoky), siderite, sphalerite, stewartite, strunzite, triphyllite, uraninite (sharp crystals), uranophane (?), vivianite, zircon, plus several unidentified species.

Comments: Parking space is limited, and a strenuous hike is required to reach this locality, but the unusual minerals and fine scenery on top of Adams Mountain will be sufficient reward for some collectors. Several of the species listed above have not been previously recorded from the Cole Quarry. They include small patches and micro crystals of phosphate minerals derived from the alteration of triphyllite. Pieces of triphyllite with a brown weathered exterior are found in the dump below the mine. Beryl crystals and radioactive minerals such as uraninite may also be found here.

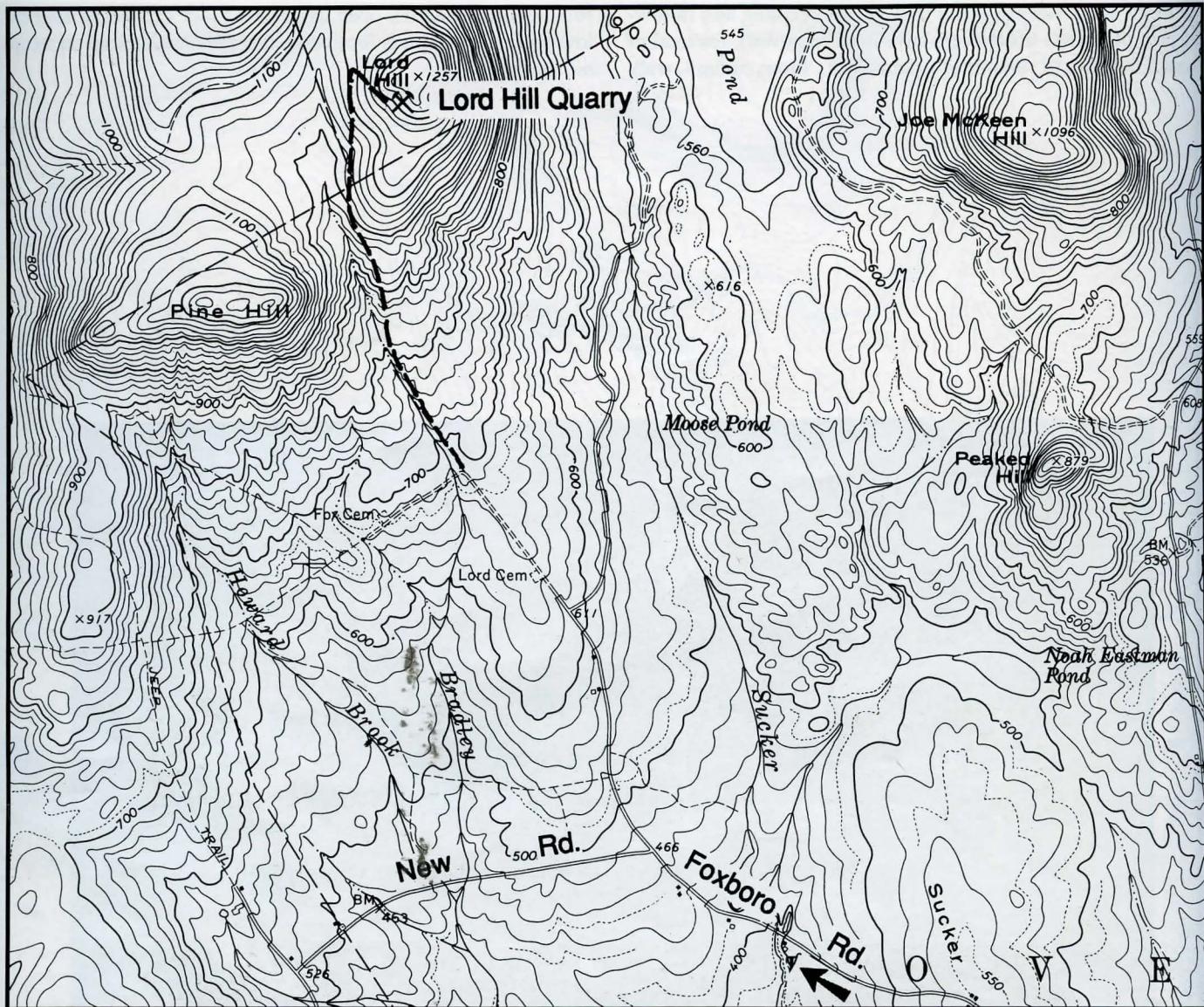
Directions: Driving: Starting at Rte. 5 in North Lovell, turn northwest onto West Stoneham Rd., which leads to Evergreen Valley recreation area, and drive 1.90 miles. Turn right onto Adams Rd. and continue approximately 2 miles to site of former ski area on west side of Evergreen Valley. Park on shoulder of main road, past clearing surrounding former ski lodge.

Walking: Walk steeply uphill to west, intercepting and following path of old ski lift (towers have been removed), for total of about 5,000 feet to summit of Adams Mtn. From summit, walk

south-southeast across open ledges for about 225 feet to edge of low cliff. Quarry pit is located in cliff face, with dump on steep hillside below.

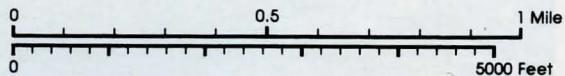


Pit and top of dump at the Cole Quarry, Stoneham, 1988. Photo by Woodrow B. Thompson.



Locality #43: Lord Hill Quarry

Town: Stoneham, Oxford County
Base map: Center Lovell 7.5' quadrangle
Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Located in the White Mountain National Forest. No permission is needed to collect minerals here. However, collecting must be noncommercial, done with hand tools, and not greatly disturb the mine area.

Minerals observed: albite, almandine (garnet), autunite/meta-autunite, beraunite, bermanite, beryllonite, bertrandite, beryl, biotite, bismuth, bismuthinite, bismutite, cassiterite, columbite, cryptomelane, damourite, elbaite (tourmaline), eosphorite, fluorapatite, fluorite, gahnite, goethite (pseudomorphic after pyrite), goyazite, heterosite, hureaulite, hydroxylapatite, hydroxyl-herderite, microcline, microlite, mitridatite, montebrasite, montmorillonite, muscovite, olenite-elbaite, phenakite, phosphosiderite, pyrite, pyrrhotite, quartz (milky, smoky), schorl (tourmaline), siderite, sphalerite,

strunzite, topaz, torbernite/metatorbernite, triphylite(?), triplite, uraninite, uranophane, vivianite, zircon (var. cyrtolite).

Comments: Lord Hill is one of the favorite collecting sites in Maine, offering a variety of minerals and White Mountain scenery. The best-known finds from this locality include large crystals of white topaz, and smoky quartz crystals encrusted by many small phenakite crystals. Most collecting activity appears to have occurred in the larger of the two quarry pits, although a major pocket containing smoky quartz and fluorapatite crystals was opened in the floor of the smaller pit in 1991. The pieces of topaz commonly found here are distinguished by their bluish-white color (especially when wet), single cleavage direction, and higher density than similar-looking pegmatite minerals. From the open ledge behind the upper quarry, a blazed trail goes northeast a short distance to a scenic overlook of Horseshoe Pond and surrounding mountains (good lunch spot).

Directions: *Driving:* From jct. of Rtes. 5 and 93 in Lovell village, drive north 2.40 miles on Rte. 5. Turn left onto West Lovell Road and proceed 2.75 miles to fork in road. Keep left at fork (on Foxboro Road) and continue northwest for 1.50 miles. Turn right onto gravel road (go straight where main road curves

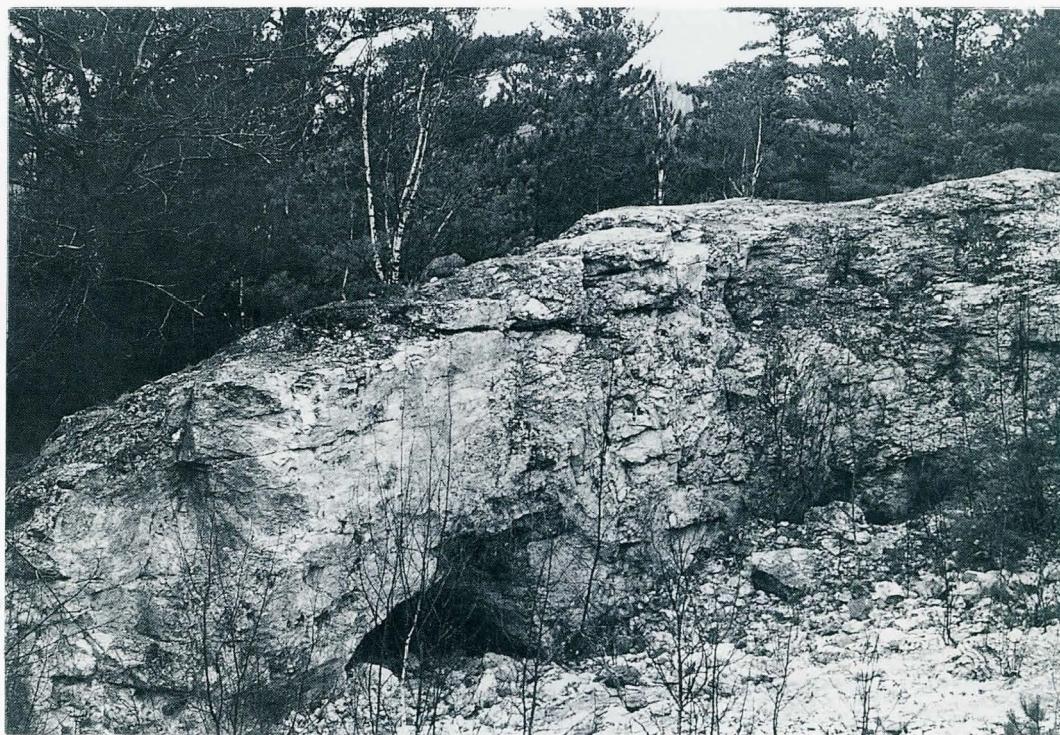
to left) and drive north 1.00 mile to jct. with woods road on left. Park here.

Walking: Continue north on foot along the quarry road for a little over one mile, keeping to right. Road makes sharp bend to right (southeast) shortly before reaching quarry.



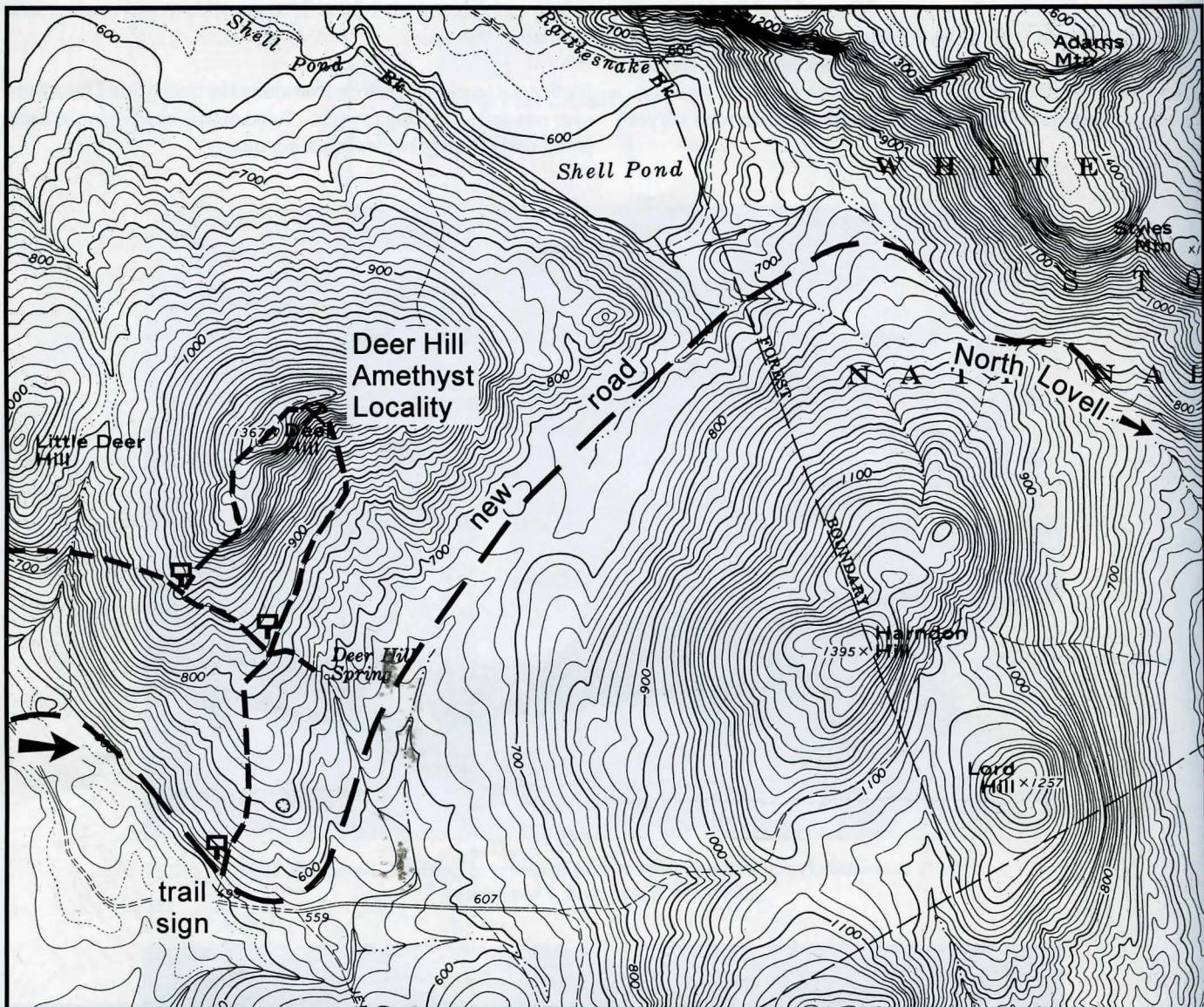
Freshly excavated crystal pocket in floor of smaller quarry at Lord Hill, Stoneham, 1991.

Photo by Woodrow B. Thompson.



The larger quarry pit at Lord Hill, Stoneham, showing remnant of pocket excavation at bottom of pit face.

Photo by Woodrow B. Thompson.

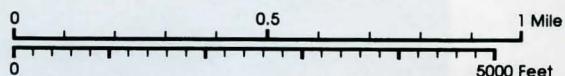


Locality #44: Deer Hill Amethyst Locality

Town: Stow, Oxford County

Base map: Center Lovell 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

Collecting status: Located in the White Mountain National Forest. No permission is needed to collect minerals here. However, collecting must be noncommercial, done with hand tools, and not involve cutting of trees or excessive disturbance of the area.

Minerals observed: albite (including var. cleavelandite), almandine (garnet), beryl, columbite, kaolinite, microcline, muscovite, pyrite, quartz (amethyst, milky, smoky crystals, including scepter crystals).

Comments: Deer Hill has produced a large quantity of amethyst specimens, including some deep reddish-purple gem-quality amethyst. A pocket encountered at the quarry pit in 1956 yielded over 1,000 pounds of quartz crystals (Shaub, 1958).

Considerable digging (or luck) is now required to find good specimens on the dump, which has been extensively dug over. Milky quartz crystals are fairly abundant, and can be collected by sifting through the debris.

Directions: Driving: From jct. of U.S. Rte. 302 with Rte. 113 in Fryeburg village, drive west and then north on Rte. 113 for 16.70 miles. Turn right onto gravel road (note sign for "Windagan" at jct). Follow this road generally eastward for 1.35 miles (crossing the Cold River valley and passing several roads to right and left). Park on right at trail sign ("Deer Hill Spring - 0.7").

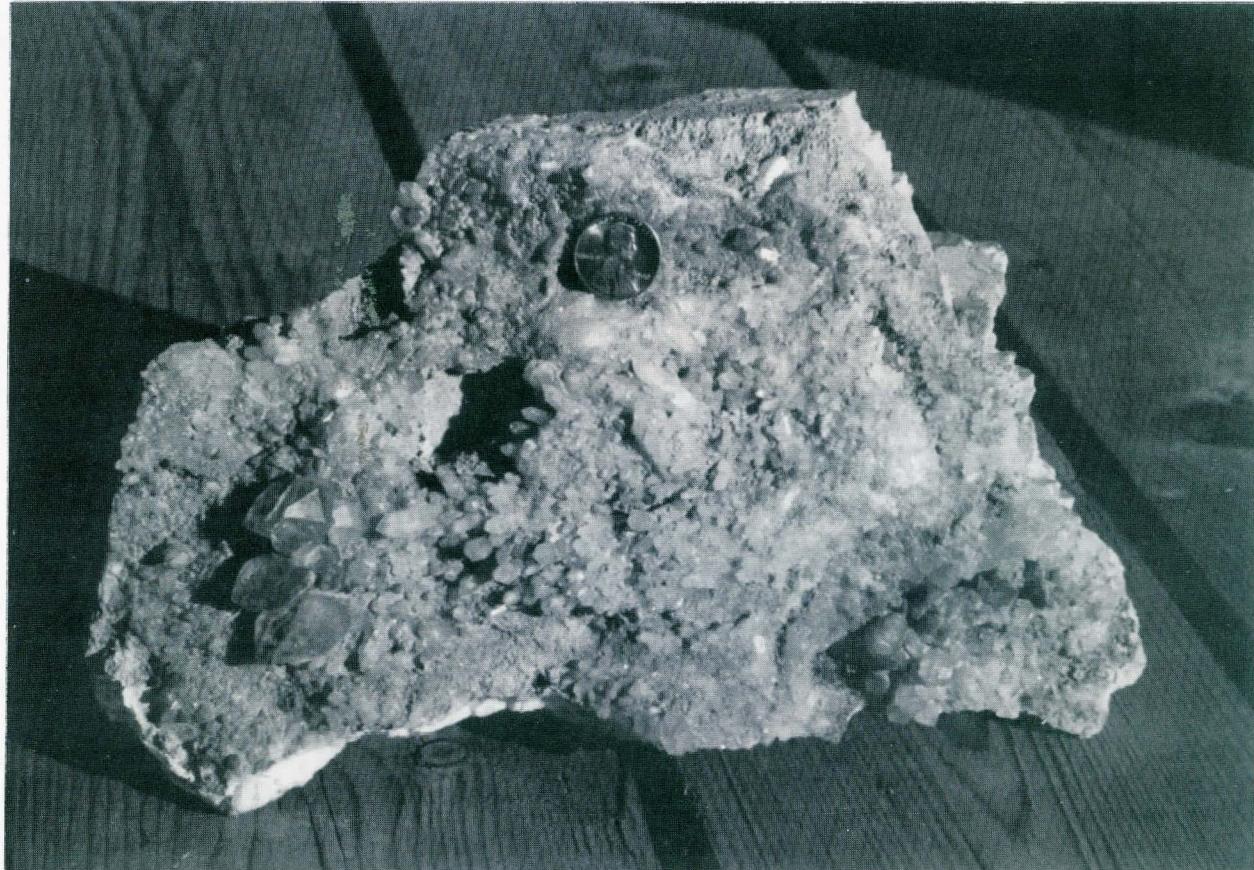
Alternate driving (from the east): Starting at Route 5 in North Lovell, turn northwest onto West Stoneham Rd., which leads to Evergreen Valley recreation area, and drive 1.90 miles. Turn

right onto Adams Rd. and continue 1.85 miles to west side of Evergreen Valley. Turn left from paved road onto gravel road, and go generally west 4.60 miles to Deer Hill Spring trail on right. Park here.

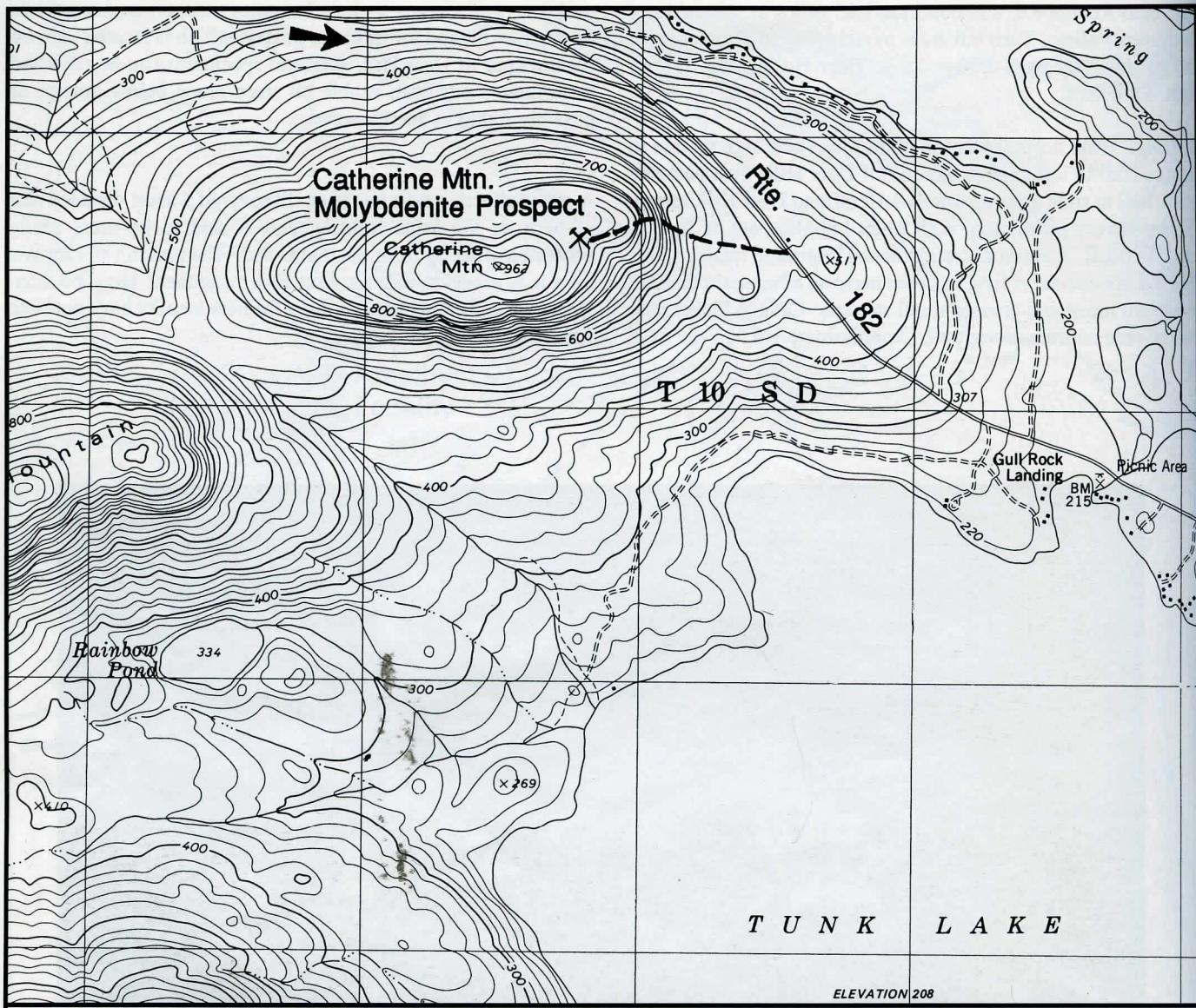
Walking: Walk north 0.60 mile to trail jct. (note sign on tree to right). Trail to left goes to summit of Deer Hill. Just past this point, trail to right goes downhill 0.10 mile to Deer Hill Spring. (Spring is very interesting, with water bubbling out of "quicksand" in pool). Continue straight ahead on trail to quarry. This trail is a woods road at first, but then narrows as it passes through evergreen forest and crosses small streams. Orange blazes may still be seen on trees along trail. Approximately 0.50 mile from

trail jct., trail curves to left, becomes steeper, and continues through hardwood forest to the quarry, which is located high on eastern spur of Deer Hill. Mineral specimens can be collected from quarry pit, from rubble on steep slope below quarry, or possibly found in nearby woods.

A new collecting area has been discovered a short distance east of here on the same hillside, and is said to be more easily accessible directly from the main road. The parking site for this area is a roadside turnout next to a prominent large boulder. However, collecting conditions at the new locality have not been field-checked by the authors.

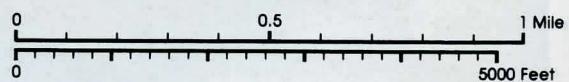


Cluster of amethyst crystals (left), with smaller milky quartz crystals, encrusting pegmatite matrix. Collected at Deer Hill amethyst locality, Stow. Photo by Woodrow B. Thompson.



Locality #45: Catherine Mountain Molybdenite Prospect (Catherine Hill)

Town: T10 SD, Hancock County
Base map: Tunk Lake 7.5' quadrangle
Contour interval: 20 feet



Type of deposit: Granite with narrow pegmatite veins and mineralized joints containing molybdenite.

Collecting status: Site is located in a sparsely inhabited woodland terrain and is believed to be open for recreational mineral collecting unless otherwise posted.

Minerals observed: albite, beryl, biotite, bismuth, clinochlore, epidote, ferberite, ferrimolybdite, fluorapatite, fluorite, holmanite(?), hornblende, magnetite, microcline, molybdenite, muscovite, powellite(?), pyrite, quartz, scheelite, stilbite.

Comments: The largest molybdenite plates occur in the pegmatite veins, but molybdenite is also found on joint surfaces and as sparsely disseminated flakes in granitic aplite and the granite adjoining pegmatite veins. The pegmatites are usually no more

than a few inches across, but their thicker portions may be vuggy and contain crystals of quartz, feldspar, and biotite. Quartz crystals up to 3 inches long have been reported from here (Hess, 1908; Trefethen and Miller, 1947; Young, 1963).

Directions: Driving: From jct. of Rtes. 182 and 200 in Franklin, drive east on Rte. 182 for 9.60 miles, passing Fox Pond on right, to highest part of road on eastern spur of Catherine Mountain. At this point there is an old house on left and field on right. Park on right side of Rte. 182, adjacent to field.

Walking: Follow woods road west, up onto Catherine Mountain, to where it ends in area of recent logging. Follow marked trail uphill to prospect holes in ledges. Numerous prospects are scattered along the mountain crest, westward from point shown on map.

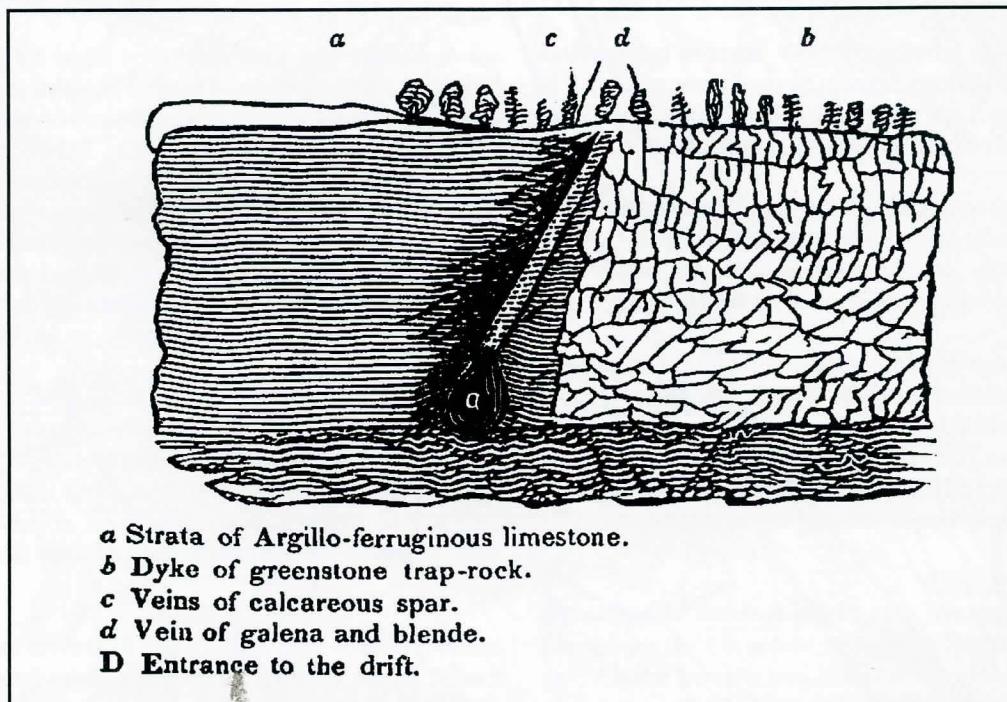
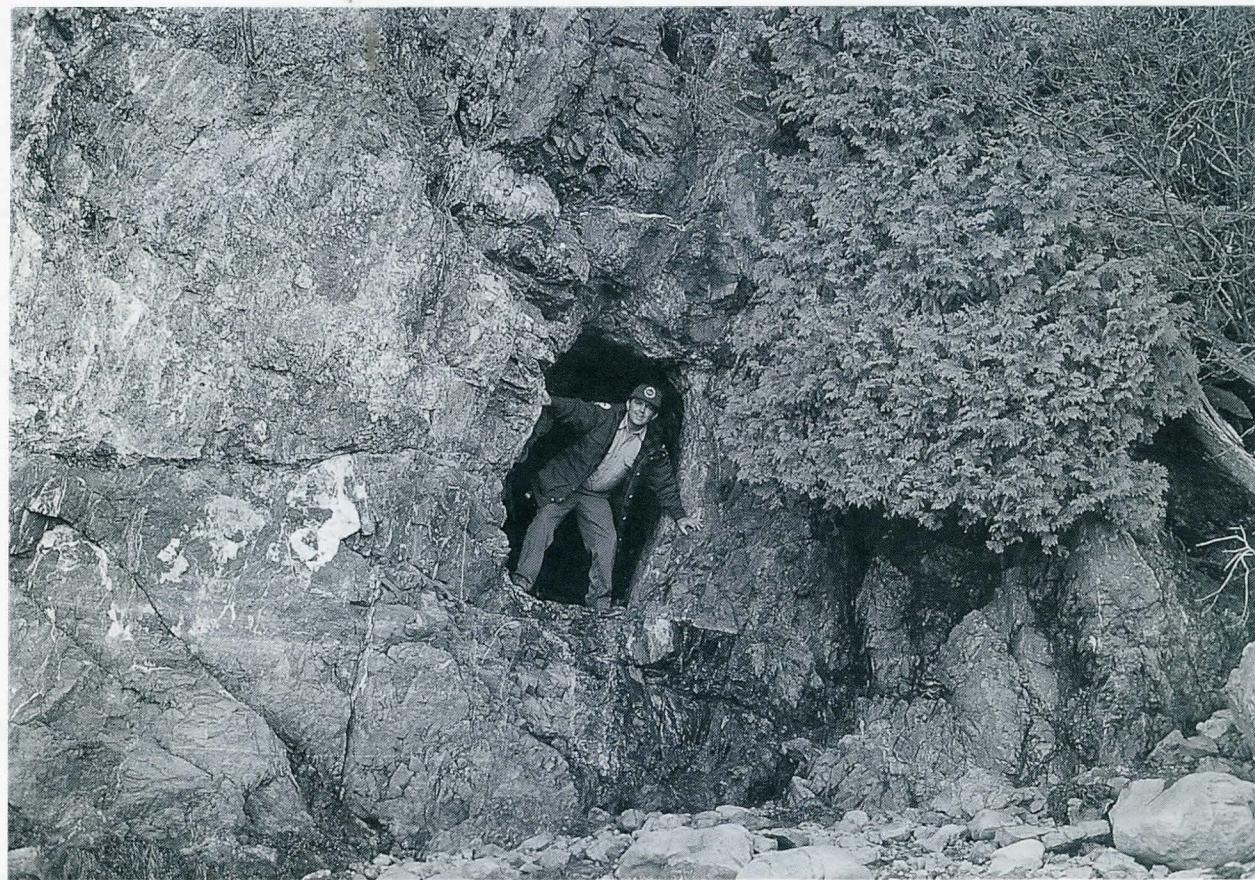
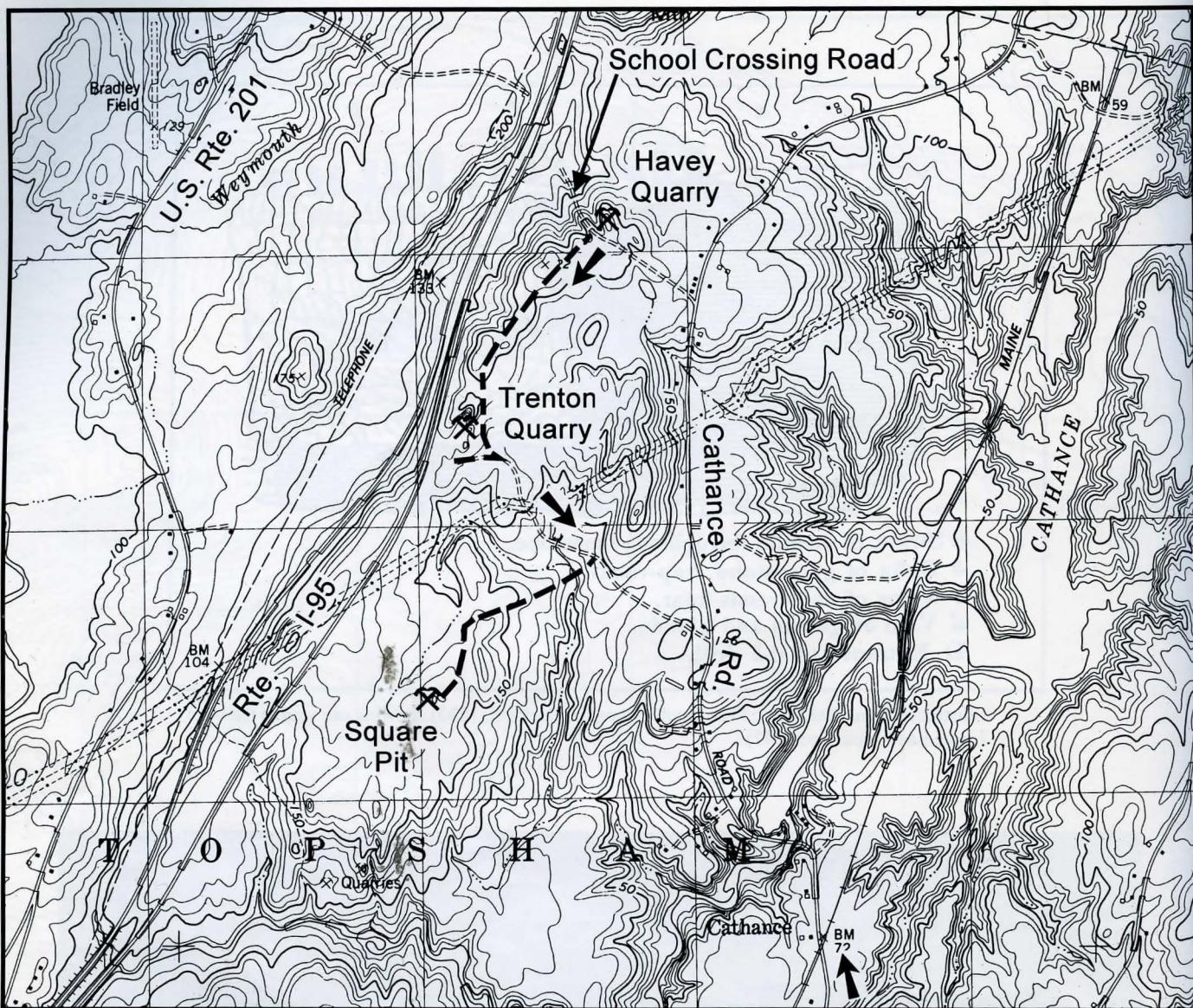


Illustration from first Maine State Geologist report (Jackson, 1837) showing ore vein at the Lubec Lead Mine (see p. 47).

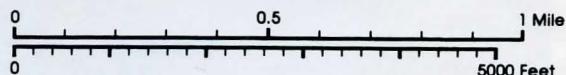


Woodrow Thompson in tunnel entrance near ocean shore at the Lubec Lead Mine (see p. 47). Photo by Duane Leavitt.



Localities #46, 47, & 48: Havey Quarry, Trenton Quarry, and Square Pit

Town: Topsham, Sagadahoc County
Base map: Brunswick 7.5' quadrangle
Contour interval: 10 feet



Locality # 46: Havey Quarry

Type of deposit: Granite pegmatite.

Collecting status: Open for non-commercial mineral collecting. Permission is generally not required, though persons visiting these quarries must assume full responsibility for their own safety. Owner: Richard Carrier, Rte. 2, Box 2106, Brunswick, ME 04011.

Minerals observed: almandine (garnet), autunite, beryl, biotite, grayite, microcline (feldspar), monazite-(Ce), muscovite, quartz, thorianite, thorogummite (yellow crystals to 2 mm, perhaps the world's best), xenotime-(Y), zircon (rare intergrowths with xenotime-(Y)).

Directions: Driving: From jct. of U. S. Rte. 201 and Rte. 24 in Topsham, drive east, then northeast, on Rte. 24 for 2.60 miles.

Turn left onto Cathance Road and proceed north 2.55 miles. Turn left onto School Crossing Road and drive west about 0.3 mile (keeping to left). The recently excavated dumps of the Havey Quarry will be seen on the right.

Locality #47: Trenton Quarry (G. D. Willes Quarry, Consolidated No. 4 Quarry)

Type of deposit: Granite pegmatite.

Collecting status: Inquire locally. The collecting status of this quarry is not known, though there is much evidence of ATV and snowmobile traffic in the area.

Minerals observed: albite, almandine (garnet), beryl, biotite, columbite, elbaite (tourmaline: green), microcline, muscovite, quartz (milky, smoky).

Comments: This large feldspar quarry was opened in the 1800's. The Consolidated Feldspar Corp. worked the north end in 1933-34, and David Ponziana mined quartz and feldspar here in 1945 (Shainin, 1948). Cavities in the northern part of the quarry produced smoky quartz crystals, superb aquamarine and golden beryl crystals, and green tourmalines (Bastin, 1911). The quarry is now primarily of historical interest, and visitors should stay away from the high cliffs. Many other small quarries and test pits occur nearby. Interstate Route 95 cuts through the western part of this quarry complex.

Directions: Driving: From jct. of U. S. Rte. 201 and Rte. 24 in Topsham, drive east, then northeast, on Rte. 24 for 2.60 miles. Turn left onto Cathance Road and proceed north 2.55 miles. Turn left onto School Crossing Road. Small groups of vehicles may park here, across from farm produce stand (check with owner). Individual vehicles may be able to park at next jct. (see below).

Walking: Walk or drive 0.30 mi to woods road on left (opposite Havey Quarry dump on right). Park here, on *left* side of School Crossing Rd., just before entrance to woods road. *Do not block local driveways!* Walk southwest on woods road for about 3,300 ft., keeping to left (on principal road) along the way, until reaching major jct. with another quarry road. Take sharp right turn onto this road and walk west 480 ft. (160 paces) to another jct. (Route I-95 is straight ahead). Turn right (north) and walk across clearing a short distance to quarry.

Locality #48: Square Pit

Type of deposit: Granite pegmatite.

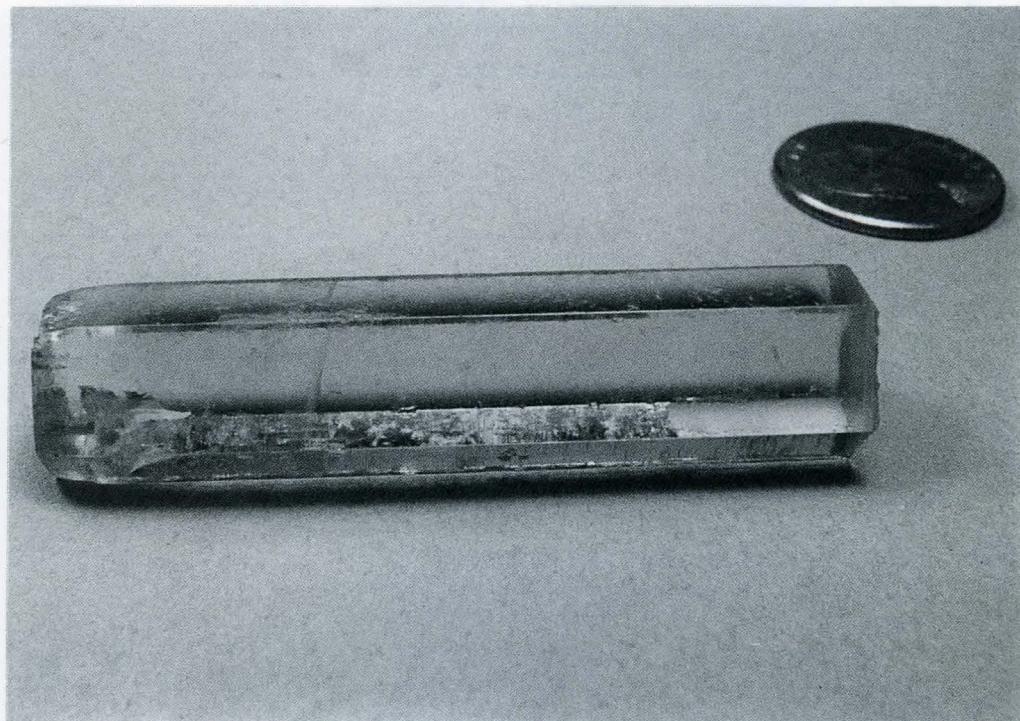
Collecting status: Open for mineral collecting. Permission is generally not required, though persons visiting this quarry must assume full responsibility for their own safety. Owner: Richard Carrier, Rte. 2, Box 2106, Brunswick, ME 04011.

Minerals observed: albite, almandine (garnet), beryl (aquamarine, golden), biotite, chalcopyrite, elbaite (tourmaline)(?), fluorapatite, microcline, molybdenite, muscovite, phenakite, quartz (milky, smoky), schorl (tourmaline), torbernite, zircon.

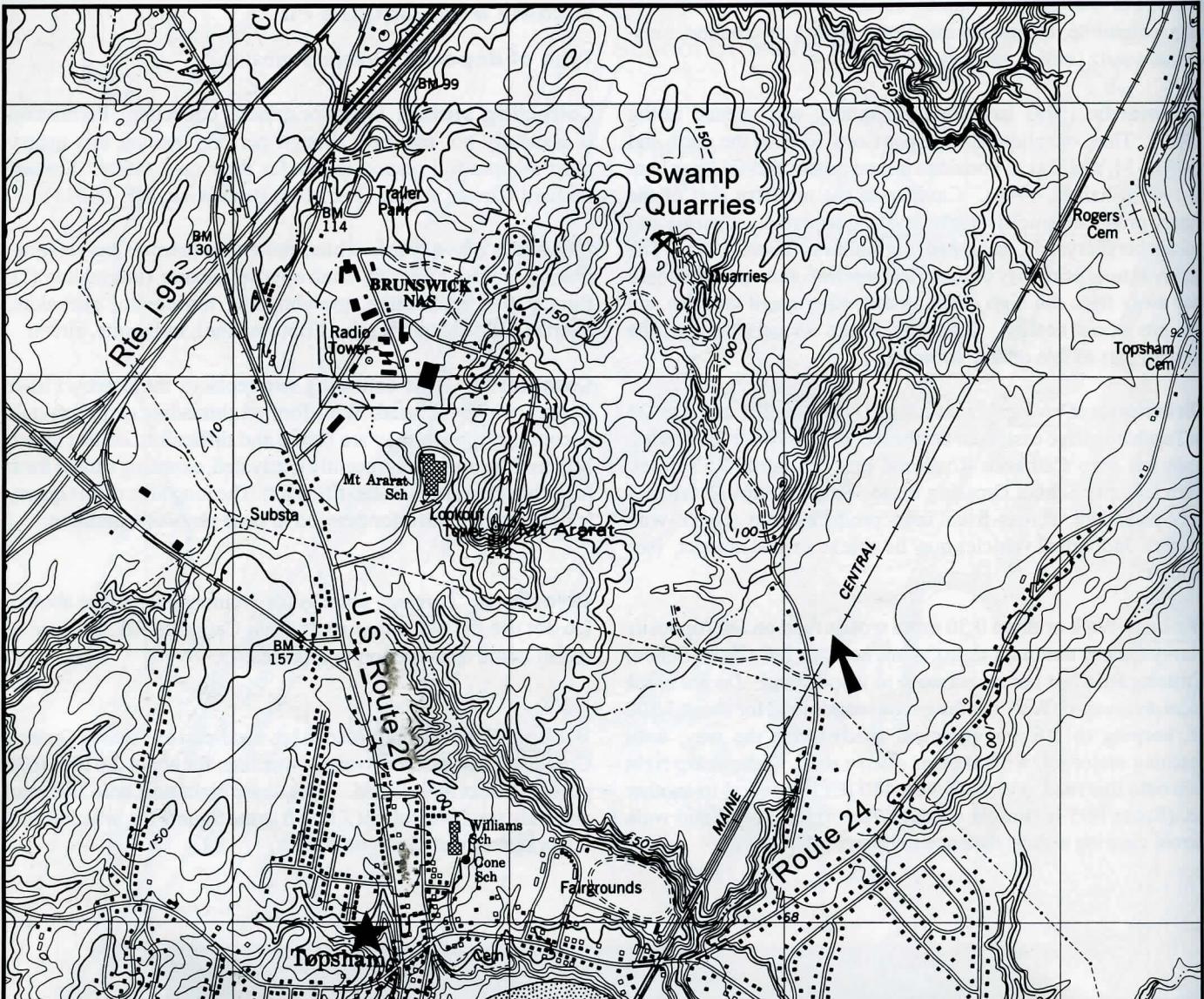
Comments: This collecting site replaces the nearby Fisher Quarry, which is closed. Well-formed almandine garnet crystals occur here, though they are brittle and difficult to collect intact. Much of the dump was recently excavated, exposing a lot of fresh material. Beware of water-filled pit! The long hike to this quarry is not recommended for persons in poor physical condition.

Directions: Driving: same as for Trenton Quarry (see above). Do not use the old access route from Cathance Rd., because of recent home construction in this area.

Walking: Follow woods road to jct. southeast of Trenton Quarry. Continue southeast, crossing power line, for about 2,010 ft (670 paces) to next major road. Take sharp right turn onto this road and walk southwest about 2,800 ft to the Square Pit, which is first major quarry and dump on right.

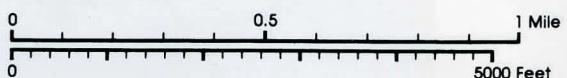


Superb crystal of gemmy golden beryl from the Trenton Quarry, Topsham. Quarter indicates size of crystal. Harvard University specimen H88282A. Photo by Vandall King.



Locality #49: Swamp Quarries

Town: Topsham, Sagadahoc County
Base map: Brunswick 7.5' quadrangle
Contour interval: 10 feet



Type of deposit: Granite pegmatite.

Collecting status: Open for non-commercial mineral collecting. Permission is generally not required, though persons visiting these quarries must assume full responsibility for their own safety. Owner: Richard Carrier, Rte. 2, Box 2106, Brunswick, ME 04011.

Minerals observed: almandine (garnet), biotite, columbite, ishikawaite, microcline (feldspar), magnetite, monazite-(Ce), muscovite, oligoclase (feldspar), peristerite (feldspar), quartz (smoky, including crystals), uraninite (superb lustrous crystals to nearly 1 inch in diameter), zircon.

Comments: The Swamp Quarries are best known for their uraninite crystals, which have been described by Francis (1987) and King and Foord (1994). This uraninite find has also been

called the "Trebilcock locality" in reference to its discoverer (Francis, 1987). The quarry pits are full of water, but uraninites occur in the dumps, both as loose crystals and along contacts between feldspar and adjacent biotite mica sheets. The uraninites are not common or easy to find, and they are radioactive at close range. Collectors who are concerned about this factor are advised not to dig for specimens at the Swamp Quarries, but research by Faller and Price (1989) indicates that properly stored radioactive mineral specimens are not hazardous.

Directions: Driving: From jct. of U. S. Route 201 and Rte. 24 in Topsham, go east for 0.90 mile on Rte. 24. Turn left onto Tedford Road and drive north 0.85 mile to fork. Bear left (uphill) and drive 0.25 mile to another fork. Keep left here and continue 0.25 mile to next jct. Turn left here (just before the large water-filled Consolidated Quarry), and park in turn-out next to road, at south end of this quarry.

Walking: Go west on woods road about 300 feet from parking area, and take first road to right, which is the original quarry road shown on topographic map (entrance to this road is just west of the Consolidated Quarry, and may not be obvious; be careful not to continue west on the network of new logging roads). Walk north along the west side of a long series of deep

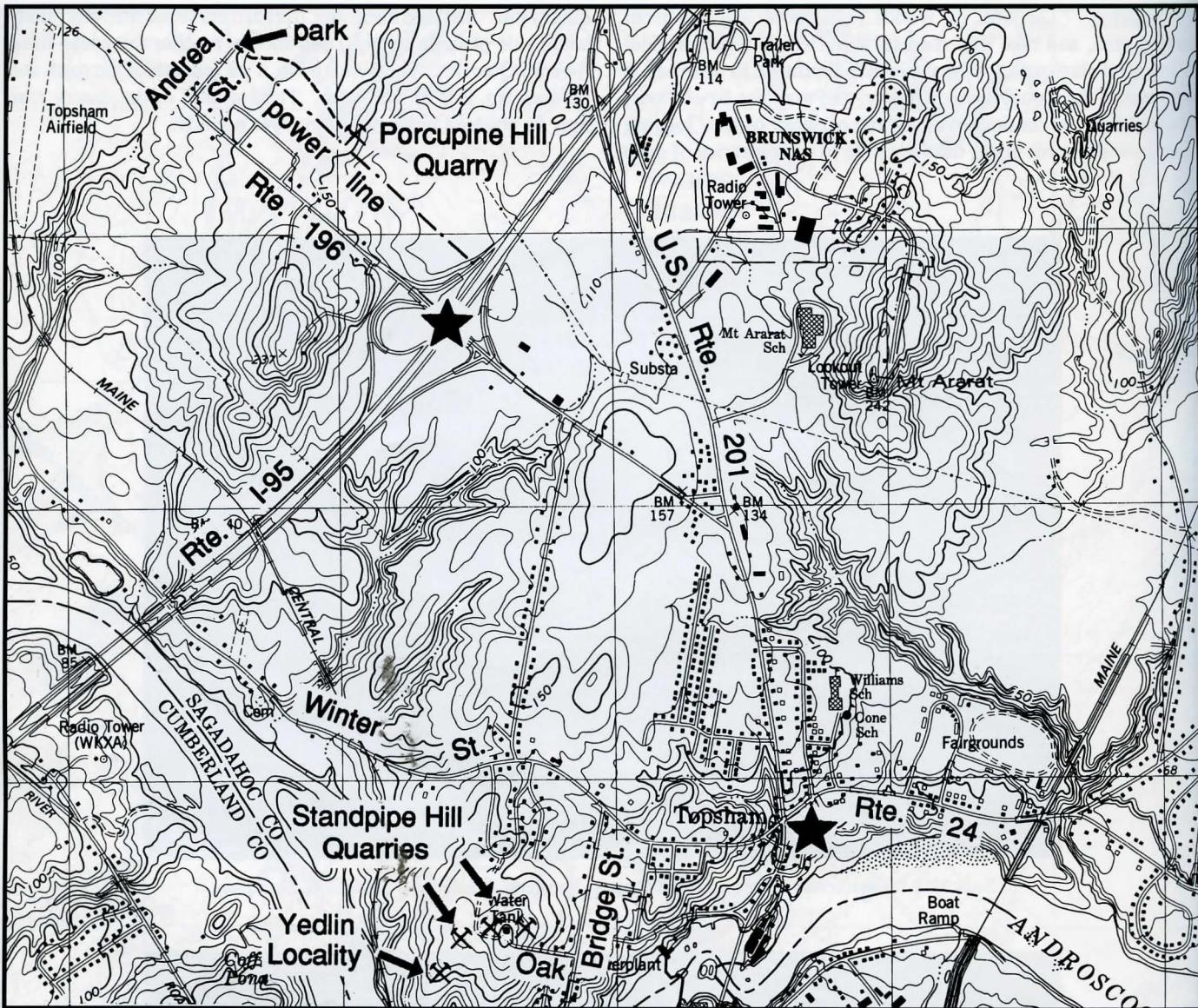
quarry pits. Just past these pits, the road curves to the west (along south side of large swamp) and shortly reaches the water-filled Swamp Quarries. The Swamp No. 1 pit is north of the road, and Swamp No. 2 is to the south. The last part of the quarry road may be covered by water during wet periods.



Searching for uraninites at Swamp No. 2 Quarry, Topsham. *Photo by Woodrow B. Thompson.*

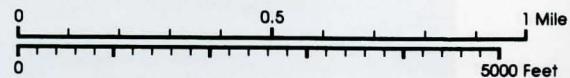


Quarry dump on north side of School Crossing Rd., Havey Quarry, Topsham (see p. 76).
Photo by Woodrow B. Thompson.



Localities #50 & 51: Porcupine Hill and Standpipe Hill Quarries

Town: Topsham, Sagadahoc County
Base map: Brunswick 7.5' quadrangle
Contour interval: 10 feet



Locality #50: Porcupine Hill Quarry

Type of deposit: Granite pegmatite.

Collecting status: Quarry is open for collecting, but written permission must be obtained from the owner: Robert Williams, P.O. Box 267, Topsham, Maine 04086. The request for permission should be accompanied by a stamped self-addressed envelope, and a letter specifying the date of your trip and releasing the owner from any responsibility for personal injury or damage resulting from your visit. Collecting is limited to the quarry dumps. Because of parking limitations and the small size of the quarry, this site is not recommended for group trips.

Minerals observed: albite, almandine (garnet), beryl, biotite, chrysoberyl, columbite, elbaite (tourmaline)(green),

fluorapatite, microcline, muscovite, quartz (frosted crystals), schorl (tourmaline).

Comments: This quarry has produced some of the finest schorl (black tourmaline) crystals in Maine. They are very lustrous and well formed, but the crystals are brittle and difficult to collect without damage. Good crystals of almandine garnet and chrysoberyl have also been found here. Schorl and chrysoberyl from Porcupine Hill are illustrated in Francis (1985) and Jacobson (1982), respectively.

Directions: Driving: From the overpass where Rte. 196 crosses Interstate Route 95 in Topsham, drive west 0.80 mile on Rte. 196, and turn right onto Andrea St. Drive 0.15 mile, continuing past end of Andrea St., and park in small dirt lot under

power line. Note: parking is not allowed on Andrea St. or elsewhere on property of the Topsham Mobile Home Park!

Walking: Follow faint trail southeast along power line. Trail shortly enters woods on left, becoming a broad distinct path. At about 350 paces from parking lot, there is a trail intersection. Continue straight ahead (parallel to power line) for about 300 paces to another intersection. Take trail straight ahead (east) for 100 ft. to quarry.

Locality #51: Standpipe Hill Quarries

Type of deposit: Granite pegmatite.

Collecting status: Site is believed to be open unless otherwise posted. "Standpipe locality" (behind large water tank) is owned by Brunswick-Topsham Water District. "Yedlin locality" is on property owned by Abenaki Land Co., c/o Frank Norton, R.F.D. Box 59, S. Harpswell, Maine 04079.

Minerals observed: Standpipe locality - albite, almandine (garnet), allanite-(Ce), bertrandite, beryl (green, yellow), biotite, bismuthinite, bismutite, columbite, ilmenite, ishikawaite, mag-

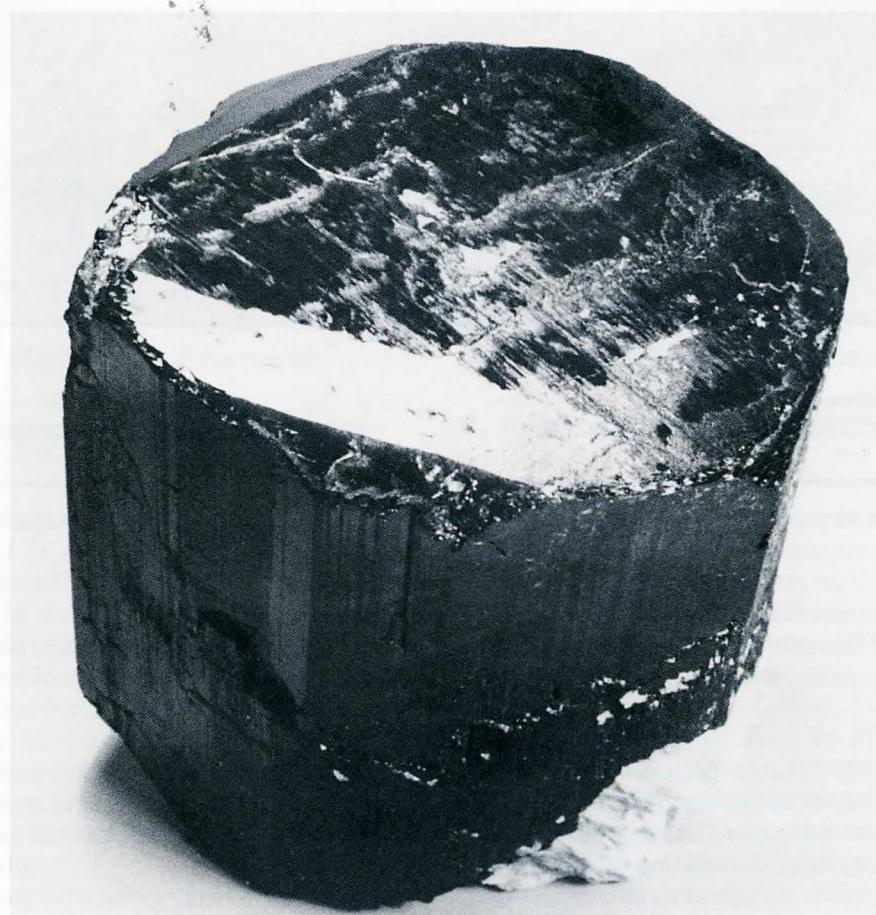
netite, microcline, muscovite, pyrite, quartz, uraninite. Yedlin locality - albite, allanite-(Ce), almandine (garnet), autunite/meta-autunite, beryl, biotite, hematite (including rosettes), ishikawaite, magnetite, microcline, microlite, monazite-(Ce), muscovite, opal (var. hyalite), quartz.

Comments: The name "Yedlin locality" refers to Neal Yedlin's (1942) publication on this site.

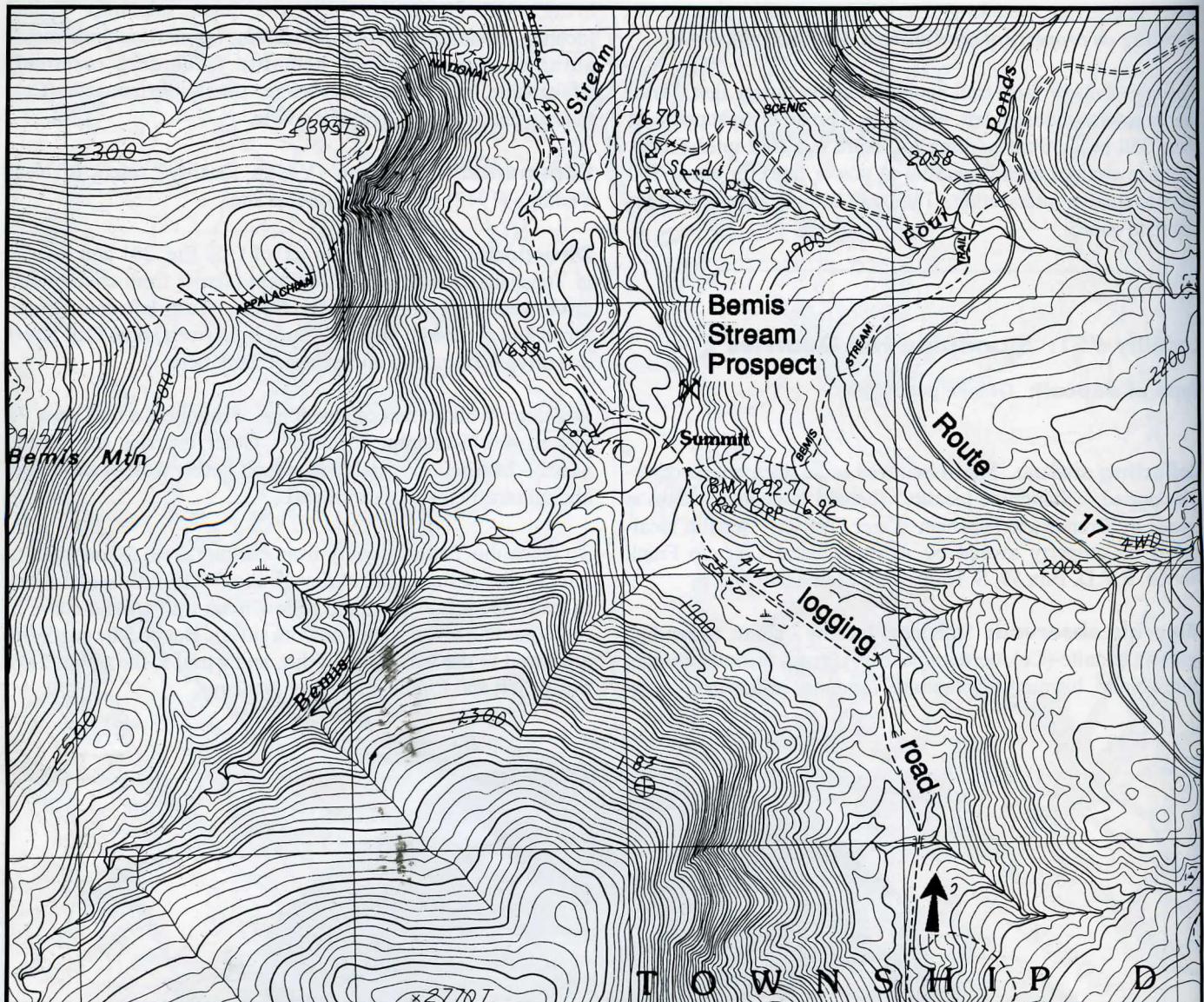
Directions: Driving: From jct. of U.S. Rte. 201 and Rte. 24 in Topsham, turn onto Winter Street (across from church) and drive west 0.45 mile to Bridge Street. Turn left onto Bridge Street and proceed 0.40 mile. Turn right (west) onto Oak Street and drive 0.10 mile to end of street. Park here.

Walking: Walk to rear of standpipe. From here a trail leads 75 feet to the "Standpipe locality." Other quarries are located nearby. Magnetite crystals occur at pit farther west of standpipe, and samarskite in pit to northeast.

To reach the Yedlin locality from parking area, follow road to left (south) of standpipe, and walk about 0.15 mile west to fork in trail. Go left at fork, and follow main trail around curve to right (passing prospect pits on both sides). Beyond the prospects are a trail to the left, a pile of dirt, and a trail to the right. Take trail to left and follow it 200 feet to quarry.



Black tourmaline (schorl) crystal, 17 cm tall, collected in 1935 from Porcupine Hill, Topsham. Harvard University specimen H92331. Photo courtesy of Harvard University.

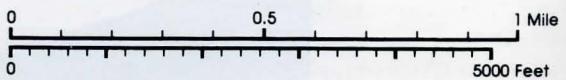


Locality #52: Bemis Stream Prospect

Town: Township D, Franklin County

Base map: Houghton 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Granite pegmatite.

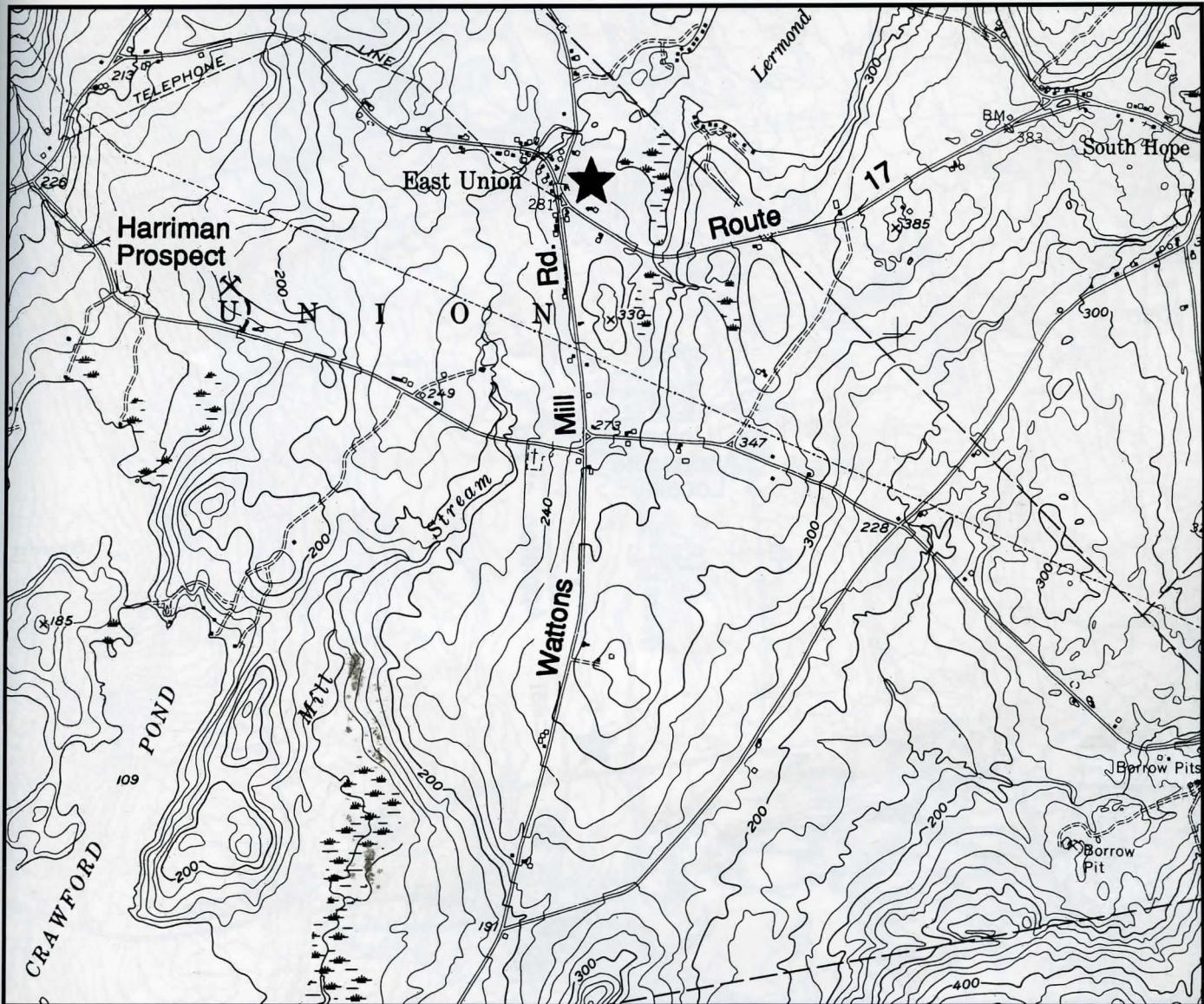
Collecting status: Permission is required to collect minerals here. Contact owner to obtain release form: Timberlands Manager, Boise Cascade Corporation, Rumford, Maine 04276 (207-364-4521).

Minerals observed: albite (var. cleavelandite), bertrandite, beryl, cassiterite, columbite-manganocolumbite, damourite, elbaite (tourmaline) (green crystals), fluorapatite (blue and purple crystals), microcline, microlite, montebrasite, montmorillonite, muscovite, pollucite, quartz, spessartine (garnet), sphalerite, spodumene (crystals), tapiolite, wodginite.

Directions: Driving: From jct. of U.S. Rte. 2 with Rte. 17 in the town of Mexico, drive north 17.10 miles on Rte. 17 to settlement known as "Houghton." Turn left (just past field) onto dirt road, crossing bridge over Swift River. Proceed generally northwest (up Berdeen Stream valley) on gravel logging road for 6.30 miles (from Rte. 17) to bridge over Bemis Stream. Park on right just past bridge and road cut.

Walking: Walk down along Bemis Stream for about 0.25 mile to steep ledge on right (east side) at small gorge. Blast holes in this pegmatite ledge expose green tourmaline and other minerals.

Alternate route: If logging road is not passable, one can probably follow Bemis Stream Trail from nearby Rte. 17 to "Summit," where the logging road crosses Bemis Stream (see map).

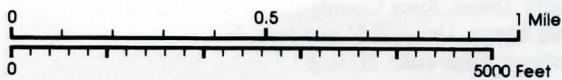


Locality #53: Harriman Prospect

Town: Union, Knox County

Base map: West Rockport 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Metal sulfides in igneous rock.

Collecting status: Inquire locally.

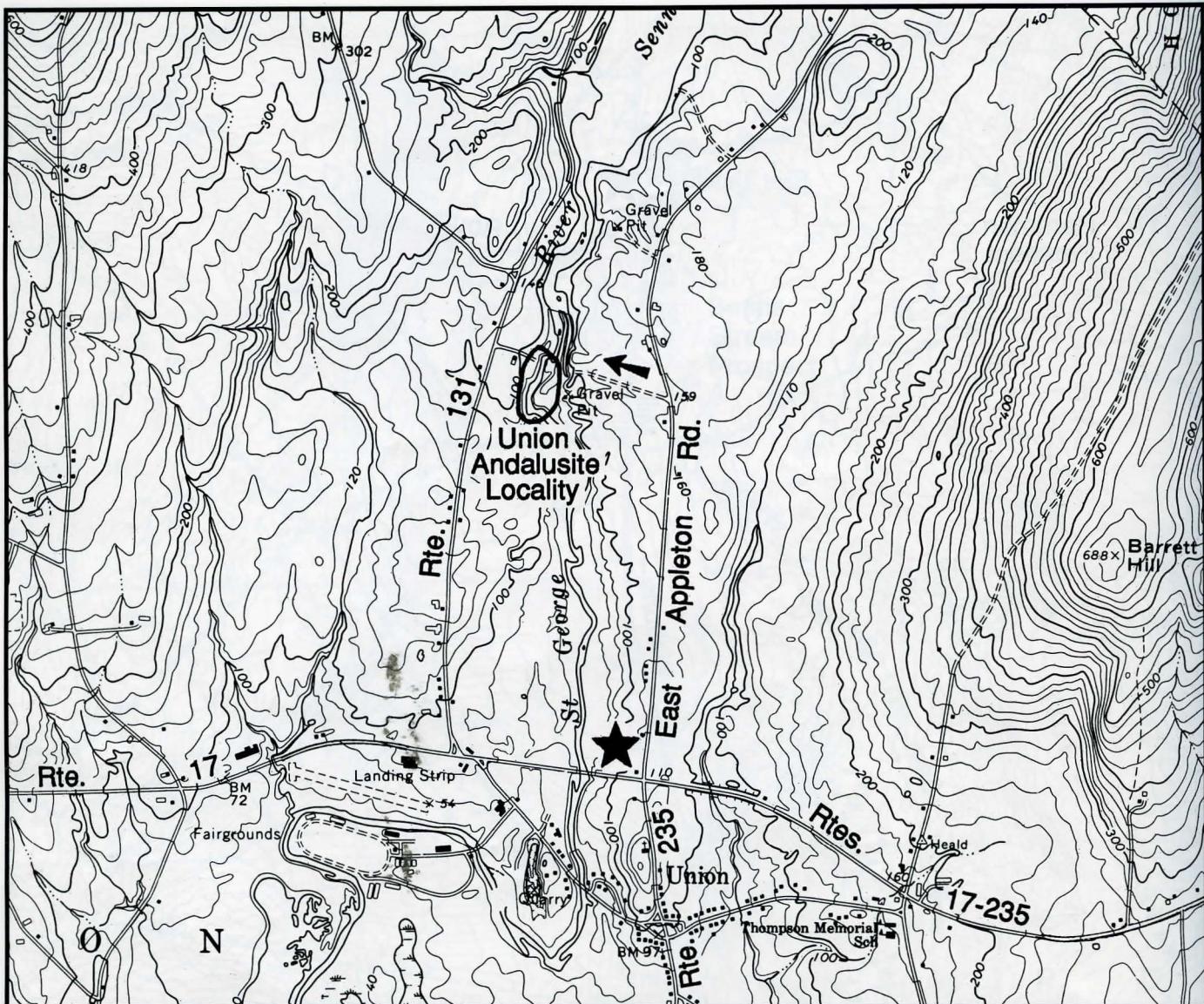
Minerals observed: augite, biotite, bornite, bravoite, calcite, chalcopyrite, clinochlore, cubanite, dolomite, enstatite, forsterite, galena, gersdorffite, graphite, hematite, hercynite, hornblende, ilmenite, labradorite, mackinawite, magnetite, molybdenite, niggliite, pentlandite, pyrite, pyrrhotite, ramelsbergite, rutile, serpentine, sperrylite, sphalerite, spinel, titanite, ulvöspinel, uvarovite, valleriite, zircon (list modified from Rainville and Park, 1976).

Comments: Many of the minerals listed above occur in very small quantities, and may be observable only with the aid of a microscope. Pyrrhotite and chalcopyrite are relatively abundant, and are disseminated in a black peridotite. The Harriman Pros-

pect is one of several sulfide occurrences in the Crawford Pond area. These deposits have been investigated for their potential as nickel ore (Beers and others, 1962). Fresh pieces of the hard sulfide-rich rock are quite attractive and might be suitable for lapidary work. A heavy hammer is useful for breaking the boulders here.

Directions: Driving: From jct. of Rte. 17 and Wattons Mill Road in East Union, drive south 0.50 mile on Wattons Mill Road. Turn right (west) onto unnamed gravel road toward Crawford Pond and proceed 0.75 mile. Park at entrance to woods road on right (at clearing with foundation hole).

Walking: Walk north on woods road for about 360 feet (120 paces). Turn left just before stone wall and continue 120 feet (40 paces) northwest along old woods road to the small prospect pit.

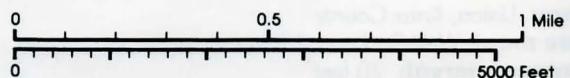


Locality #54: Union Andalusite Locality

Town: Union, Knox County

Base map: Union 7.5' quadrangle

Contour interval: 20 feet



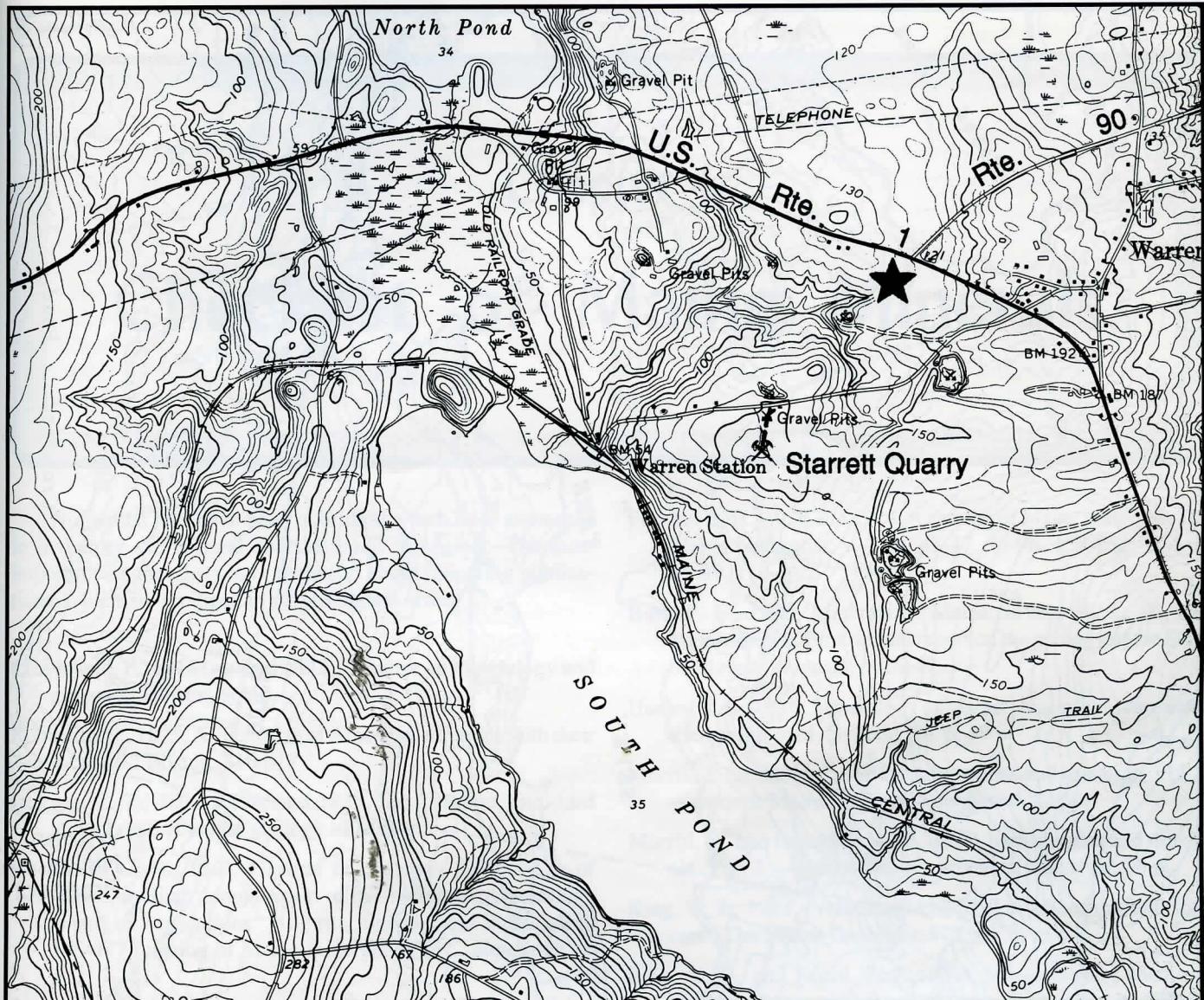
Type of deposit: Metamorphic minerals in mica schist.

Collecting status: Open for collecting.

Minerals observed: large, rough andalusite crystals in schist.

Directions: *Driving:* From jct. of Rtes. 17 and 235 (north of Union village), drive north 0.90 mile on East Appleton Road. Park on left (west) side of road.

Walking: Walk west on dirt road for about 0.30 mile (passing old gravel pits) to bank of St. George River. Elongate andalusite crystals occur in ledges and loose rocks along the river. Collecting is easiest during periods of low water.

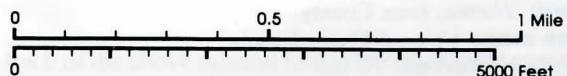


Locality #55: Starrett Quarry

Town: Warren, Knox County

Base map: Waldoboro East 7.5' quadrangle

Contour interval: 10 feet



Type of deposit: Granite pegmatite.

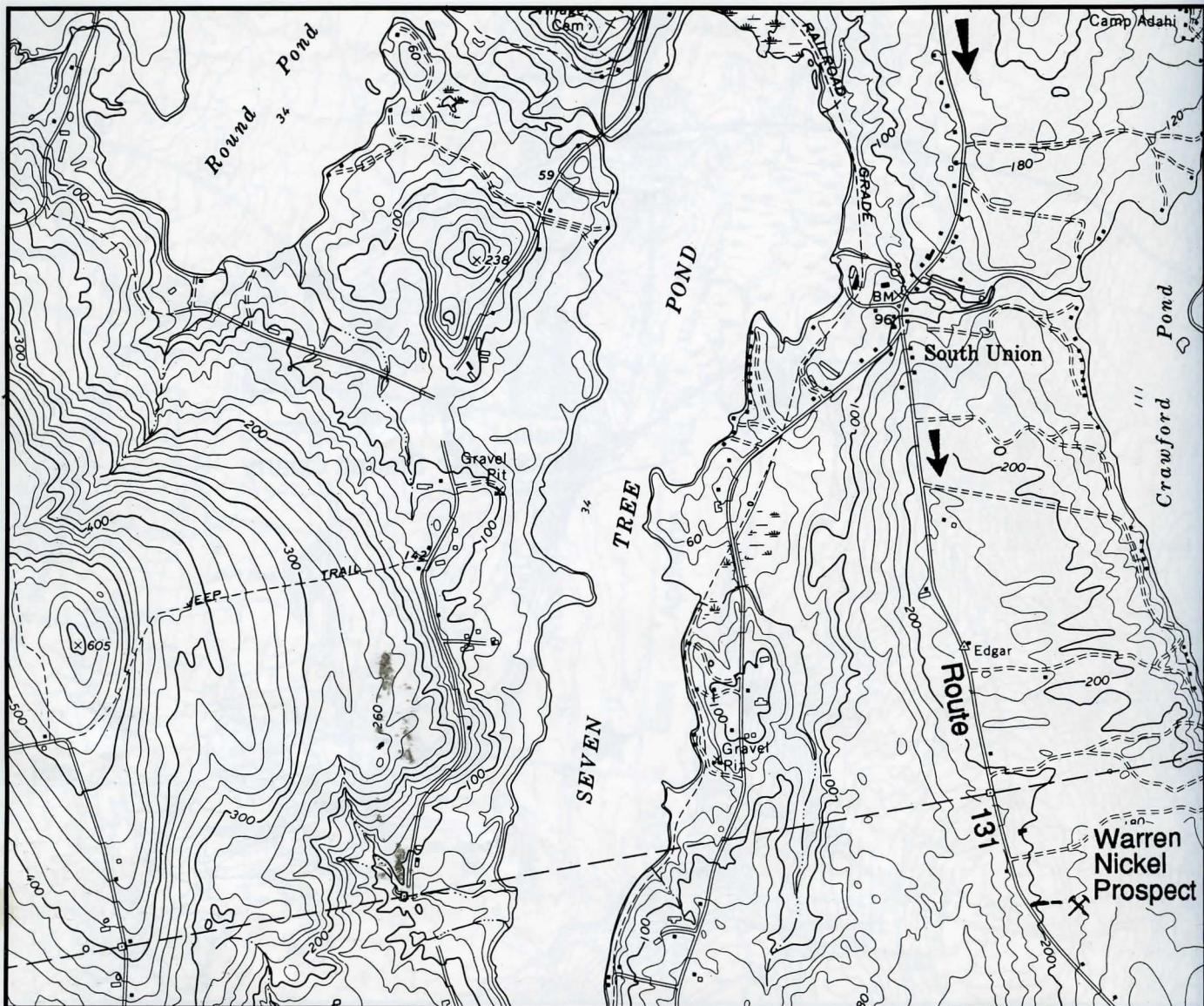
Collecting status: Inquire locally.

Minerals observed: albite (including var. cleavelandite), almandine (garnet), autunite/meta-autunite, beryl, calcite, cassiterite, columbite, fluorapatite, heterosite, lepidolite, microcline, montebrasite, muscovite, opal, pyrite, quartz, rutile, schorl (tourmaline), sillimanite, sphalerite, spodumene, talc, torbernite/metatorbernite, triphylite, uraninite, zircon.

Comments: The geology of this locality was described by Hess and others (1943).

Directions: *Driving:* From jct. of U.S. Rte. 1 and Rte. 90 in Warren, drive 0.30 mile southeast on Rte. 1. Turn right onto road that goes west to Warren Station, and continue 0.65 mile. Park on edge of road at this point.

Walking: Walk about 480 feet (160 paces) on dirt road leading south-southwest from paved road (trail crosses field and enters woods). This will bring you to the quarry pit (on right) and dump area. Spodumene and other minerals can be found by digging in the dump.

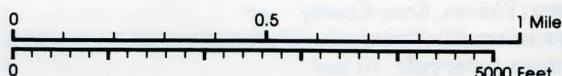


Locality #56: Warren Nickel Prospect

Town: Warren, Knox County

Base map: Union 7.5' quadrangle

Contour interval: 20 feet



Type of deposit: Metal sulfides in igneous rock.

Collecting status: Owned by Knox Mining Company at time of field check. Property or mineral rights may have been sold, so inquire locally.

Minerals observed: andesine-bytownite, apatite, augite, biotite, bornite, bravoite, calcite, chalcocite, chalcopyrite, clinochlore, cummingtonite, diopside, enstatite, fluropapatite, forsterite, galena, garnet, graphite, hematite, hercynite, hornblende, ilmenite, mackinawite, magnetite, marcasite, molybdenite, niggliite, olivine, pentlandite, pyrite, pyrrhotite, quartz, rutile, sperylite, sphalerite, spinel, valleriite (list modified from Rainville and Park, 1976).

Comments: This is one of the few places in southern Maine where large masses of pyrrhotite and chalcopyrite can readily be

found. Much of this sulfide ore is somewhat weathered and crumbly, but good specimens can be trimmed out. Many of the minerals listed above occur in very small quantities and may be observable only with the aid of a microscope.

Directions: Driving: From jct. of Rtes. 17 and 131-south (east of Union village), drive south 2.60 miles on Rte. 131, crossing the Warren town line at 2.30 miles. Turn left onto woods road (note large boulder to right of road entrance, and stone wall to left). Park here.

Walking: Walk east on woods road until reaching the prospect pit (about 0.10 mile). Note rusty pile of ore minerals in the pit area.

Chapter 4

Checklist of Maine Minerals

Numerous lists have been published which have attempted to inventory the mineral species found in Maine. The most important of these lists have appeared in the following publications, which are arranged in chronological order:

Cleaveland, P., 1816 (revised 1822), Treatise on mineralogy and geology: Boston, 668 p.

Robinson, S., 1825, A catalogue of American minerals with their localities: Boston, 316 p.

Jackson, C. T., 1837, 1838, and 1839, First, second, and third annual reports on the geology of Maine.

Hitchcock, C. H., 1861, General report upon the geology of Maine, *in* Sixth annual report of the Secretary of the Maine Board of Agriculture: Augusta, Stevens and Sayward, p. 146-477 (catalog of Maine minerals by J. C. Houghton on p. 216-221).

Hitchcock, C. H., 1862, Geology of Maine, *in* Seventh annual report of the Secretary of the Maine Board of Agriculture: Augusta, Stevens and Sayward, p. 223-447 (supplement to 1861 mineral catalog on p. 406-407).

Kempton, C. W., 1879, Sketches of the new mining district at Sullivan, Maine: American Institute of Mining and Engineering, Transactions, v. 7, p. 349-356.

Williams, A., Jr., 1888, Useful minerals of the United States, *in* Mineral resources of the United States, calendar year 1887: U. S. Geological Survey, p. 688-832.

Dana, E. S., 1892 (and earlier editions), Sixth edition of Dana's system of mineralogy: New York.

Emmons, W. H., 1910, Some ore deposits in Maine and the Milan Mine, New Hampshire: U. S. Geological Survey, Bulletin 432, 62 p.

Schrader, F. C., Stone, R. W., and Sanford, S., 1917, Useful minerals of the United States: U.S. Geological Survey, Bulletin 624, 412 p.

Perkins, E. H., 1922 and 1924, A catalog of Maine minerals: The Maine Naturalist, v. 2, p. 43-47, 95-96, 159-162; v. 4, p. 45-49, 110-115.

Burr, F. F., 1930, Minerals of Maine, *in* Merrill, L. H., and Perkins, E. H., First annual report on the geology of the State of Maine: Augusta, p. 26-47.

Hanley, J. B., 1936, Mineralogy of Maine: Augusta, Maine State Planning Board, Bulletin No. 6, 59 p.

Morrill, P., and others, 1958, Maine mines and minerals, Vol. 1 -- western Maine: privately published, 80 p.

Morrill, P., and Hinckley, W. P., 1959, Maine mines and minerals, Vol. 2 -- eastern Maine: privately published, 80 p.

King, V. T., 1981, Preliminary checklist of Maine mineral species: The Maine Geologist, v. 7, no. 4, p. 4-6.

King, V. T., and Foord, E. E., 1994, Mineralogy of Maine -- Volume 1: Descriptive mineralogy: Maine Geological Survey, 418 p.

Each of the above mineral lists is longer or more specialized than its predecessors, and has included the progress of knowledge. The list that follows contains over 308 species that have been found in Maine. In addition, there are over 50 species whose occurrences in Maine do not appear to have been adequately studied, and at least three more that are new to science. The question marks call attention to reports on which further work should be done. Although an effort has been made to personally verify each entry, many mineral occurrences were copied directly from the above publications, as well as other sources.

Most of the localities listed for each mineral species are names of towns or (in sparsely populated areas) unorganized townships such as Township D, T3 R5 BKP WKR, etc. Names of other geographic features and even a few rock formations are also included here, depending on the original sources of locality data. For example, a placer gold occurrence may be no more

specific than the name of the river in which gold was found; and certain minerals listed in geological literature are widely distributed in rock formations that extend across town boundaries. Some reported localities may be difficult or impossible to find on a map. This is especially true of obsolete geographic names. A good reference that will pinpoint many of them is *The Length and Breadth of Maine* (Attwood, 1977). Modern towns, settlements, and civil divisions generally can be found in *The Maine Atlas and Gazetteer*.

Only a few representative entries appear for the common species listed below, such as quartz, because there are many locations for these minerals. Other species are so rare in Maine that preserved examples are unknown. For example, pyrargyrite and proustite specimens from this state cannot be located in major mineral collections, and recent efforts to collect new samples have been unsuccessful. Some minerals have been found as loose specimens in glacial deposits, such as the axinite discovered in a single boulder in Wales. If an unconfirmed species is easily identified, and there is no evidence to discredit its reported Maine occurrence, we have included it in our checklist. The reputations of previous workers, who accepted identifications of specimens that were available during their eras, provide the basis for continuing a listing here.

It is not the goal of producing a checklist to merely end up with a longer list than before. The primary requirement of this checklist is accuracy. It is as important to question previous discoveries as it is to report new ones. Collectors and professional mineralogists alike need to be careful in identifying what they have. There are a great many look-alike minerals. Their similarities frequently extend through the various tests to which a mineral can be subjected. A few species are so similar, that when they have been fully characterized, the choice of which name to give them is not much more than an opinion. Many of the question marks in this list probably refer to identifications made by individuals who jumped to erroneous conclusions. It may even be erroneous for us to question their identifications.

It is essential to preserve rare minerals and provide as much data as possible when new discoveries are made. For example, spinel occurs in a variety of geological settings and is not a very rare mineral. Six of the ten Maine spinel localities listed here are from geologically reasonable environments, and have been confirmed with complete data or by analogy with scientific research elsewhere. However, the other four localities are doubtful, because of the chemistry of the host rocks and absence of conditions essential to the formation of spinel. The four questionable localities are also localities for the species gahnite, a poor synonym for which is "zinc spinel." Thus, a careless reference to a gahnite locality might simply read "spinel." An addition to any mineral checklist should be based on accurate identification of the sample, and the sample itself should be preserved. A good practice is to donate a specimen in its matrix to a curated public mineral collection. Samples without matrix are of less value because their mineralogical associations cannot readily be determined.

The most up-to-date and conservative mineral nomenclature is used here, in conformity with accepted standards and decisions by the International Mineralogical Association (IMA). The

Mineral Reference Manual by Nickel and Nichols (1991) is an essentially comprehensive account of all IMA-approved mineral names and formulas, including some variety names. The "=" designates modern, preferred, or interpreted equivalents of mineral names reported in the literature.

acanthite(?) - Acton, Appleton, Cherryfield, Crawford, Deer Isle, Franklin, Gouldsboro, Hampden, Hancock, Hersey, Lubec, Newfield, Parmachenee (T5 R5 WBKP), Rockport, Sedgwick, Sullivan

actinolite - Bethel, Blue Hill, Boothbay, Brunswick, Deer Isle, Freeport, Herman, Jay, Lewiston, Minot, Monmouth, Newry, North Haven, Oxford, Portland, Pownal, Raymond, Rockland, Rumford, Unity, Winthrop

adularia = microcline; Brunswick(?), Parsonsfield(?), Thomaston

aegirine - Cashes Ledge, Litchfield, Phippsburg, York.

aegerine-augite - Litchfield, Newfield, Parsonsfield, Shapleigh, T10 SD, York

aenigmatite(?) - Cashes Ledge, York

agalmatolite = talc group; Rockland

albite - Albany, Auburn, Bethel, Blue Hill, Buckfield, Franklin, Georgetown, Greenwood, Hartford, Hebron, Litchfield, Minot, Newry, Norway, Owen, Oxford, Paris, Peru, Poland, Rumford, Sanford, Stoneham, Stow, Topsham, Township D, West Gardiner, Woodstock; many other locations

allanite-(Ce) - Auburn(?), Brunswick, Buckfield, Hebron, Norway(?), Paris, Phillips batholith, Somerville(?), Songo pluton, Stoneham(?), Topsham, Vinalhaven, York

allophane - Brooksville, Woolwich(?)

alluaudite group - Paris

almandine - Albany, Auburn, Bethel, Boothbay Harbor, Bowdoinham, Brunswick, Buckfield, Byron, Edgecomb, Friendship, Fryeburg, Georgetown, Gorham, Greenwood, Hallowell, Harpswell, Hebron, Lewiston, Newry, Norway, Paris, Peru, Phippsburg, Poland, Rangeley, Rumford, Stoneham, Stow, Topsham, Warren, Windham; many other locations

alum(?) - apparent misidentification or post-mine growth; Brooksville, Buckfield, Gilead(?), Portland, Wales

alumina = aluminosilicate(?); Gilead

alunogen(?) - apparent misidentification or post-mine growth; Houlton, Newry, Rumford

amblygonite - Hebron, Rumford; other occurrences are probably montebrasite

amianthoide = fibrous or asbestosiform amphibole, usually tremolite or actinolite; Topsham

amphibole - group of minerals; see actinolite, anthophyllite, arfvedsonite, barroisite, basaltic hornblende, cummingtonite, edenite, ferroedenite, ferrogedrite, ferrohornblende, ferropargasite, gedrite, grunerite, hastingsite, holmquistite, kaersutite, magnesiohornblende, pargasite, pargasitic hornblende, riebeckite, tirodite, tremolite

analcime - Brooklin, Denmark, Greenwood(?), Lower Enchanted Twp, Mapleton, Perry, Rockland, South Berwick, Winterville Formation

anatase - Bridgton, Calais, Denmark, Newry, Stow, Sullivan(?)
 Topsham
andalusite - Appleton, Bangor, Belfast, Bingham, Bucksport,
 Byron schist, Camden, Cape Elizabeth, Carrabassett, Carmel,
 Chatham, Farmington, Freeport, Georgetown, Gorham, Greenville,
 Harpswell, Industry, Jackson, Kingfield, Madrid, Monmouth,
 Moosehead (T2 R6 BKP EKR), Moscow, Mount Abraham, No. 21 Twp,
 North Berwick, Phillips, Phippsburg, Rangeley, Raymond, Readfield,
 Roxbury, Rumford, Sandy River Plantation, Searsmont, South
 Berwick, Spaulding, Standish, Township C, Township E,
 Union, Warren, Washington, Wesley, Whitneyville
andesine = variety of albite; Brunswick, Calais, Cornish, Denmark,
 Mapleton, North Haven, St. George, Sanford, Warren
andradite - Arrowsic, Deer Isle(?), Georgetown, Woodstock
anglesite - Brooksville, Garland, Gouldsboro, Lincolnville(?)
 Lubec, Pembroke
anhydrite - Blue Hill
ankerite - Belfast Quadrangle, Cape Elizabeth, Carys Mills
 Formation, Digdeguash Formation, Mexico, Penobscot,
 Sangerville Formation, Waterville Formation
annite - Albany, Auburn, Gardiner, Litchfield, Norway, Rangeley,
 Rockport, Stonington, Topsham, many other locations
anorthite - Blue Hill, Monhegan, Phippsburg, Raymond, Vassalboro;
 many locations of labradorite-anorthite composition
 feldspar
anthophyllite - Appleton, Belfast Quadrangle, Blue Hill, Byron,
 Harpswell, Newry, Rumford, Township 6 north of Weld,
 Union
antigorite - Boil Mountain complex, Brooksville, Deer Isle, East
 Moxie, The Forks, Hampden, Hermon, Jim Pond, Katahdin
 Iron Works, Lincolnville, Lower Enchanted Twp., North
 Haven, Oakfield, Rockland, Sidney, Union, Whiting, T3 R5
 BKP WKR, T5 R6 BKP WKR
antimonial silver(?) = old name; may be dyscrasite or other
 species; needs verification; Sullivan
antimony(?) - Falmouth, Old Town, Union
apatite - common apatite is fluorapatite; see also hydroxylapatite
apophyllite(?) - Perry
aragonite - Brooksville, Fryeburg, Jim Pond, Pembroke,
 Thomaston(?), Unity, Winthrop(?)
arfvedsonite - Berwick, Wells, York
argentite = acanthite; argentite is not stable at earth-surface
 temperatures
arnoldite = fuchsite-bearing rock; Alder Stream, Jim Pond
arsenate of nickel(?) - Falmouth
arsenic(?) - listed (1861) and then corrected (1862) by Hitchcock;
 = arsenopyrite or löllingite, Greenwood; Buckfield
 (Morrill and others, 1958) = mis-entry of Hitchcock report?
arsenical iron = löllingite or arsenopyrite; Paris
arsenopyrite - Acton, Auburn(?), Bar Harbor, Belfast, Bethel,
 Blue Hill, Bonds Mount, Bowdoin, Brighton, Brooksville,
 Brunswick(?), Buckfield, Carthage, Clinton(?), Concord,
 Corinna, Davis, Deer Isle, Eastport, Eden, Fairfield(?),
 Farmington, Fort Point, Franklin, Garland, Greenwood,
 Hampden, Hancock, Hebron, Lebanon, Levant, Lowell(?),
 Minot(?), Mount Desert(?), Newfield, New Limerick,
 Newry, Norway, Owls Head, Paris(?), Parsonsfield, Pembroke,
 Penobscot, Poland, Rangeley, Rockland, Rockport,
 Rumford, Sedgwick, Sidney, Skowhegan(?), South
 Thomaston, Standish, Stoneham(?), Sullivan, Sumner(?),
 Thomaston, Topsham(?), Tremont, Union, Verona Island,
 Washington, Wesley, West Falmouth(?), Winslow
asbestos (asbestus) = varietal name of several fibrous minerals;
 see also clinochrysotile
astrophyllite - Biddeford(?), Cashes Ledge, Litchfield, Tunk
 Lake pluton(?)
augelite - Newry
augite - Addison, Deer Isle, Monhegan, North Haven, York
aurichalcite - Brooksville, Lubec, Pembroke
autunite/meta-autunite - Albany, Auburn, Buckfield, Casco(?),
 Cornish(?), Freeport, Georgetown, Greenwood, Hebron,
 Lovell, Minot, Newfield(?), Newry, Norway, Paris, Peru,
 Phippsburg, Poland, Raymond, Rumford, Stoneham, Stow,
 Topsham, Warren
axinite - see ferroaxinite
azurite - Blue Hill, Brooksville, Gouldsboro, Guilford, Hancock,
 Moxie Gore, Pembroke, Woolwich
babingtonite - Bath
barite - Bethel(?), Brunswick(?), Calais(?), Caribou, Castle Hill,
 Deer Isle, Gouldsboro, Grafton, Hancock, Pembroke, Sanford(?),
 Sullivan, Unity(?), Woodstock, TDR2 WELS, T9R3 WELS
barroisite - Sapling Twp.
basaltic hornblende - Andover, Deer Isle, Massachusetts Gore,
 Newry
basanite = fine-grained quartz, but not cryptocrystalline; Topsham
"beauxite"(?) - Aurora, Limewood
bementite - Castle Hill, TD R2 WELS, T9 R3 WELS
beraunite - Greenwood, Newry, Paris, Rumford, Stoneham
berlinite - unspecified outcrop (proprietary information in a
 mining report)
bermanite - Greenwood, Newry, Stoneham
bertrandite - Albany, Auburn, Bethel, Brunswick, Georgetown,
 Greenwood, Hebron, Newry, Norway, Paris, Phippsburg,
 Poland, Stoneham, Sumner, Topsham, Township D
beryl - Albany, Andover, Andover North Surplus, Andover West
 Surplus, Auburn, Baldwin, Batcheldors Grant, Bethel, Blue
 Hill, Bowdoin, Bowdoinham, Bridgton, Brunswick, Buckfield,
 Byron, Canton, Catherine Hill, Cushing, Dayton, Dixfield,
 East Livermore, Edgecomb, Freeport, Frye, Fryeburg,
 Georgetown, Gorham, Grafton, Greene, Greenwood, Hebron,
 Lincoln(?), Livermore, Lovell, Lyman, Minot, Monmouth,
 Newcastle(?), Newry, North Yarmouth, Norway,
 Oxford, Paris, Parsonsfield, Peru, Phippsburg, Poland,
 Pownal, Richmond, Rumford, South Cushing, Standish,
 Stoneham, Stow, Sumner, Topsham, Township 6 north of
 Weld, Vienna, Warren, Waterford, Wayne(?), West Bath,
 Windham, Winslow, Winthrop, Woolwich, York, T10 SD

- beryllonite** - Greenwood, Hebron(?), Newry, Norway, Paris, Rumford, Stoneham, Topsham; "baseball" beryllonite is botryoidal hydroxyherderite
- beta-uranophane** - Albany, Newry, Stoneham
- beudantite** - Garland
- beusite** - Greenwood
- biotite** = black annite or phlogopite; Albany, Auburn, Batchelders Grant, Bath, Bowdoin, Bowdoinham, Brunswick, Buckfield, Catherine Hill, Denmark, Edgecomb, Freeport, Georgetown, Gilead, Greenwood, Hebron, Lakeville, Lewiston, Litchfield, Lovell, Ludlow, Mapleton, Newry, Paris, Peru, Poland, Rumford, Saint George, Stoneham, Southwest Harbor, Topsham, Waterford, T10 SD; many other locations
- birnessite** - Shawn Creek in The Forks Quadrangle
- bismuth** - Brooksville, Brunswick(?), Cooper, Franklin(?), Greenwood, Hancock, Lubec(?), Newry, Sorrento(?), Sullivan, Topsham, T10 SD
- bismuthinite** - Brunswick, Greenwood, Lovell, Newry, Stoneham, Stow, Topsham, West Paris
- bismutite** - Greenwood, Stoneham, Stow, Topsham
- black manganese** = general name for unidentified black earthy minerals
- bog iron** = a mixture of earthy to compact iron oxides; generally composed of limonite, hematite, etc.
- bornite** - Acton, Auburn(?), Baileyville, Bingham, Blue Hill, Brooksville, Concord, Crawford, Lubec, Norridgewock(?), Pembroke, Union, Warren, Wesley, Woolwich
- boulangerite** - Blue Hill
- bournonite** - Blue Hill
- bowenite** = variety of antigorite; Eustis
- braunite** - Castle Hill, Hodgdon, TD R2 WELS, T9 R3 WELS
- brazilianite** - Greenwood(?), Newry, Paris
- brochantite** - Brooksville, Topsham
- brookite** - Bridgton, Calais, Paris(?), Topsham
- calcite** - Appleton, Bethel, Blue Hill, Bristol, Brooksville, Brunswick, Bucksport, Calais, Camden, Casco, Castle Hill, Cherryfield, Chesuncook Twp, Clinton, Cornish, Crawford, Cutler, Deer Isle, Dexter, Dover-Foxcroft, Eastport, Eustis, Farmington, Farmington Falls, Fort Fairfield, Frankfort, Franklin, Freeport, Gouldsboro, Greenwood, Hancock, Harmony, Houlton, Industry, Jonesboro, Jonesport, Kennebunk, Lewiston, Linneus, Lubec, Mapleton, Marshfield, Mexico, Minot, Monson, Mount Desert, Norridgewock, North Alfred, North Yarmouth, Norway, Patch Mountain Formation, Pembroke, Perry, Phippsburg, Portland, Presque Isle, Rangeley, Raymond, Rockland, Rockport, Sanford, Searsport, Skowhegan, South Berwick, Stonington, Strong, Sullivan, Thomaston, Trescott, Turner, Union, Vinalhaven, Warren, Washington, Wesley, Wilton, Winslow, Winthrop, Woodstock; many other locations
- caledonite(?)** - Brooksville
- cancrinite** - Gardiner, Litchfield, West Gardiner
- carbonate-apatite** = carbonate-fluorapatite or carbonate-hydroxylapatite
- carminite** - Garland
- carnotite(?)** - unspecified in Aroostook County, Cornish(?)
- cassiterite** - Andover(?), Auburn, Aurora (in drift), Blue Hill(?), Buckfield, Georgetown, Greenwood, Hebron, Newry, Norway, Paris, Peru, Poland, Rumford, Southwest Harbor(?), Stoneham, Topsham, Township D, Warren, Winslow
- cerargyrite(?)** = chlorargyrite
- cerium ore(?)** - Phippsburg
- cerussite** - Brooksville, Garland, Lincolnville, Lubec, Pembroke, Rockport
- chabazite** - Phippsburg(?), Sullivan, Woolwich
- chalcedony** = variety of cryptocrystalline quartz; Georgetown, Perry, Phippsburg, Woolwich
- chalcocite** - Blue Hill, Brooksville, Franklin, Sullivan, Union, Warren, Woolwich
- chalcophanite(?)** - Rumford
- chalcopyllite** - Brooksville
- chalcopyrite** - Acton, Addison, Alder Stream Twp, Appleton, Attean Twp, Blue Hill, Bradstreet Twp, Brooksville, Brunswick(?), Castine, Cherryfield, Columbia, Concord, Cooper, Corinna, Crawford, Deer Isle, Dexter, Dover-Foxcroft, Eastport, Ellsworth, Falmouth, Franklin, Gardiner(?), Garland, Gouldsboro, Guilford, Hampden, Hancock, Jackson, Jim Pond Twp, Katahdin Iron Works, Knox, Lamoine, Lincolnville, Lubec, Machias, Moxie Gore, Newfield, New Limerick, Newry, Paris, Parmachenee (T5 R5 WBKP), Parsonsfield, Pembroke, Penobscot, Phillips, Portage, Readfield(?), Ripley, Rockland, Rockport, Rumford, Sangerville, Sedgwick, Steuben, Sullivan, Topsham(?), Trescott, Union, Warren, Waterford(?), Wesley, West Bethel, West Falmouth, Whiting, Winslow, Winterport, Winthrop(?)
- chamosite** - Byron, Mount Desert, Rangeley Plt, Standish, Township D, T12 R8 WELS, Windham
- chiastolite** = andalusite with geometric color zoning resembling a cross
- childrenite(?)** - Rumford(?); not verified in Maine
- chlorargyrite(?)** - Sullivan
- chlorite group** - see chamosite and clinochlore
- chloritoid** - Berwick(?), Biddeford, Bingham, Camden, Cumberland, Embden, Harpswell, Kingfield, Mayfield, Monmouth, North Haven, Old Orchard Beach, Parkertown, Portland, Saco, Scarboro, Solon, South Portland, Vassalboro, Winthrop
- chlorophyllite** (fahlunite) = clinochlore; Beaver Cove, Unity(?)
- chromite** - Alder Stream Twp, Deer Isle(?), East Moxie Twp, Jim Pond Twp, The Forks Plt, TD R2 WELS
- chrysoberyl** - Auburn, Brunswick, Buckfield(?), Canton, Edgecomb, Georgetown(?), Gilead, Grafton Notch, Greenwood, Hartford, Hebron, Litchfield, Lovell, Mechanic Falls, Mexico(?), Minot, Newry, Norway, Paris, Peru, Rumford, Standish, Stoneham, Stow, Sumner(?), Topsham, West Paris, Woodstock
- chrysocolla** - Beddington(?), Blue Hill, Brooksville, Penobscot(?), T22 MD(?), Wiscasset, Woolwich
- chrysolite** = forsterite (olivine)
- chrysotile** - see clinochrysotile
- cimolite** = clayey alteration; Norway

clarkeite(?) - Newry(?), Stoneham(?)

clay = general term for fine-grained minerals which sometimes show plastic properties; clay minerals proper include kaolinite, nacrite, halloysite, and montmorillonite, which are found in Maine; "clay" also refers to fine-grained micaceous minerals which can behave like clay, such as muscovite, illite, chlorite and even pulverized quartz, feldspars, and other rock-forming minerals; Abbot, Augusta, Bangor, Bath, Brewer, Brunswick, Calais, Danville, Durham, East Bethel, East Dover, East Sullivan, Eliot, Ellsworth, Howland, Kennebunk, Leeds, Lubec, Madison, Masardis, North Yarmouth, Orland, Portland, Presque Isle, Rockland, Saco, South Thomaston, Thomaston, Topsham, Waterville, Winslow, Woolwich

cleavelandite = platy variety of albite

clinochlore - Albany, Alfred, Biddeford, Cape Elizabeth, Castine, Castle Hill, Cherryfield, Concord, Cornish, Cutler, Dedham, Deer Isle, Eastport, Ellsworth schist, Frankfort, Franklin, Gouldsboro, Greenwood, Hanover, Hermon, Hovey Mtn., Jonesboro, Katahdin Iron Works, Lincolnville, Lubec, Marshfield, Minot, Muscle Ridge Plantation, Newry, North Haven, Norway, Perry, Portland, Rumford, Saint George, Sanford, Searsport, Stonington, Stow, Sullivan, Tremont, Union, Unity, Vinalhaven, Waterford, Woodstock, T10 SD

clinochrysotile - Addison, Alder Stream Twp, Bristol(?), Brooksville(?), Cherryfield, Columbia(?), Deer Isle, Hampden(?), Harpswell, Island Falls(?), Jim Pond Twp, Lower Enchanted Twp, North Haven(?), Richardsontown Twp, Sidney(?), Trescott(?), Union(?), Whiting(?), T3 R5 BKP WKR, T5 R6 BKP WKR, TD R2 WELS

clinozoisite - Brooksville, Casco, Dallas, Farmington, Flagstaff Twp, Minot, New Sharon, Phippsburg, Quimby Formation, Raymond, Sanford

cobalt-silver-arsenide(?) - Castine

coccolite = diopside; Woodstock

collophanite = massive unspecified apatites; Castle Hill, Mt. Katahdin (T3 R9 WELS), TD R2 WELS

columbite - Albany, Auburn(?), Baldwin, Bowdoin, Brunswick, Buckfield, Byron(?), Canton, Carroll, Georgetown, Gilead, Greenwood, Hebron, Newfield(?), Newry, Norway, Paris, Peru, Phippsburg, Poland, Pownal, Rumford, Southwest Harbor(?), Standish, Stoneham, Stow, Topsham, Township D, Township E, Warren, Waterford, West Paris

cookeite - Albany(?), Auburn, Buckfield, Cape Elizabeth(?), Georgetown, Greenwood, Hebron, Newry, Norway, Paris, Poland, Rumford(?), Standish(?), Topsham

copiapite(?) - appears to be a post-mine growth; Acton, Katahdin Iron Works, Waterville, Winthrop

copper - Acton(?), Appleton(?), Blue Hill, Brooksville, Camden(?), Carroll Plt, Cherryfield(?), Ellsworth(?), Hancock(?), Penobscot(?), Perry(?), Sorrento(?), Stoneham(?), Sullivan(?), Whiting(?)

copperas - unidentified iron sulfates

copper silicate(?) - Penobscot

cordierite - Attean, Baileyville, Big Squaw Twp, Blue Hill, Carrying Place Town Twp, Cupusptic pluton (contact zone), Cushing Formation, Dennistown, Edgecomb, Ellsworth schist, Gardiner, Jackman, Monroe, Oakfield, Sidney; many other locations

corundum - Andover(?), Arrowsic(?), Bath(?), Blue Hill, Carrabassett Valley, Georgetown, Gilead(?), Greenwood(?), Harpswell, Litchfield, Rumford(?), Smyrna, Winthrop(?)

covellite - Blue Hill, Brooksville, Gouldsboro, Kibby, T3 R4 BKP WKR, T12 R8 WELS

crandallite - Newry, Paris

cryolite(?) - appears to be misidentified; Lubec

cryptomelane - Greenwood, Paris, Poland, Stoneham

cubanite - Brooksville, Union

cummingtonite - Appleton Ridge Formation, Aziscohos Formation, Bath, Belfast Quadrangle, Big Squaw Twp, Camden, Harfords Point Twp, Harpswell, Lincoln, Little Squaw Twp, Spring Point Formation, Sugarloaf gabbroic massif, Union, Warren

cuprite - Blue Hill, Brooksville, Pembroke

cymatolite = mixture of albite and muscovite; Auburn, Buckfield, Newry, Norway, Peru, Rumford, Stoneham, Topsham, Warren

cyrtolite = a radioactive variety of zircon

dahllite = a carbonatian variety of hydroxylapatite

damourite = muscovite - Auburn, Buckfield, Hebron, Newry, Norway, Paris, Rumford, Stoneham, Topsham

danburite(?) - appears to be misidentified; Paris

datolite - Blue Hill, Perry

delessite = chlorite group; Castle Hill

diadochite - Auburn, Greenwood, Newry, Paris, Stoneham

diallage = diopside; Addison, Deer Isle, Monhegan

diaspore - Litchfield

diatomaceous earth = diatomite = fossil diatoms; many small deposits in ponds

dickinsonite - Auburn, Greenwood, Hebron, Newry(?), Poland, Rumford(?)

diopside - Addison, Alfred, Auburn, Bath, Bethel, Casco, Cornish, Crawford, Cushing, Deer Isle, Gray, Greenwood, Lewiston, Limerick, Minot, Mount Vernon, Norridgewock, North Alfred, North Haven, Orrington, Phippsburg, Raymond, Rumford, Sanford, Turner, Vienna, Woodstock; common

dioptase(?) - Beddington(?), T22 MD(?)

dolomite - Alder Stream Twp, Boothbay Harbor, Brunswick(?), Camden, Cherryfield, Concord, Hope, Jim Pond Twp, Linneus, Lubec, Machiasport, Mapleton, Mount Vernon, New Limerick, Patten, Pembroke, Phippsburg, Rockland, Thomaston, Union, Vienna, Warren

dravite - Blue Hill, Newry, Paris, Penobscot, Rumford

dufrenite(?) = appears to be misidentified rockbridgeite; Newry

dumortierite - Edgecomb, Georgetown, Greenwood(?), Topsham, Woolwich

earlshannonite - Greenwood, Newry

edenite - Passadumkeag River pluton, Robbinston, Sapling Twp

elbaite-olenite - Auburn, Buckfield, Georgetown, Greenwood, Hebron, Newry, Norway, Paris, Poland, Rumford, Standish, Stoneham, Topsham, Township D, West Paris

eleonorite - Newry

eleolite = nepheline

emerald = old identification for ordinary green beryl

emery(?) - Andover, Greenwood; that mined in Arrowsic is garnet only

enargite - T12 R8 WELS

enstatite - Addison, Baileyville, Calais, Chapman, The Forks, Katahdin Iron Works, Lincolnville, Oakfield, Saint George, Union, Vinalhaven, T16 R6 WELS; many other locations

eosphorite - Auburn, Baldwin, Buckfield, Georgetown, Greenwood, Hebron, Newry, Norway, Paris, Poland, Rumford, Stoneham

epidote - Addison, Alfred, Baileyville, Bar Harbor, Belgrade, Bethel, Bridgton, Brunswick, Calais, Camden, Cape Neddick, Carmel, Casco Bay, Cornish, Deer Isle, Eastport, Franklin, Franklin, Freeport, Gouldsboro, Isle au Haut, Hancock County, Jonesboro, Jonesport, Lubec, Machiasport, Marshfield, Minot, Mount Desert, Mount Katahdin, Norridgewock, Norway, Pembroke, Phippsburg, Portland, Pound of Tea Island, Raymond, Ripogenus Dam (T3 R11 WELS), Sanford, Schooner Mountain, Searsport, South Thomaston, Stonington, Sullivan, Topsham, Tremont, Wayne, Whitefield, Winter Harbor, Woodstock, T5 R1 NBPP, T5 R7 BKP WKR, T9 R13 WELS; many other locations

erythrite(?) - probable misidentified coating; Castine

essonite = brown grossular

euclase(?) - Albany(?), Topsham

eucryptite(?) - Newry

evansite(?) - Paris

fairfieldite - Buckfield, Greenwood, Hebron, Newry, Norway, Paris, Poland, Rumford, Stoneham

fayalite - Big Squaw Twp, Little Squaw Twp, Newfield, Shapleigh, Tunk Lake pluton, Wells, York, T5 R9 WELS

feldspar = a group of similar minerals; see adularia, albite, andesine, anorthite, bytownite, labradorite, microcline, oligoclase, orthoclase, perthite

ferberite - Blue Hill, Bowdoinham(?), Cooper, Cornish(?), Topsham, T10 SD

ferrimolybdite - Blue Hill, Bradstreet Twp, Brunswick, Buckfield(?), Cooper, Franklin(?), Litchfield, Poland(?), Sanford, Topsham, Tunk Lake, T10 SD

ferrisicklerite - see heterosite

ferristilpnomelane - see stilpnomelane

ferroaxinite - Bath, Brooksville, Casco(?), Greenwood, Minot(?), Phippsburg(?), Sanford(?), Sorrento, Wales(?)

ferrocolumbite - see columbite

ferroedenite - Passadumkeag River pluton, Sapling

ferroedenitic hornblende - Passadumkeag River pluton

ferrohornblende - Deer Isle, Sapling Twp, South Portland

ferromanganite = apparently a mixture of black stain-forming minerals

ferropargasite - Sapling Twp

ferrosilite - Big Squaw, Cove Point, Little Squaw

ferrostrunzite - Newry

ferrotantalite - see tantalite

fluorapatite - Addison, Albany, Alfred, Auburn, Batchelders Grant, Bethel, Biddeford, Blue Hill, Bowdoinham, Bristol(?), Brunswick, Buckfield, Calais, Catherine Hill, Chapman, Dedham, Deer Isle, Frankfort, Franklin, Freeport, Greenwood, Hallowell, Hancock, Hartford, Hebron, Hollis, Jay, Jonesport, Lewiston, Lincolnville, Litchfield, Livermore, Lovell, Mapleton, Mason Twp, Milbridge, Minot, Monmouth, Mount Desert, Muscle Ridge Islands, Newry, Norridgewock, Northwest Harbor, Norway, Owen, Oxford, Paris, Peru, Phippsburg(?), Poland, Pownal, Rumford, Saint George, Searsport, Smithfield, South Thomaston, Stoneham, Stonington, Sullivan, Sumner, Topsham, Township D, Vinalhaven, Warren, Waterford, West Bath, Whitefield, Woodstock, Woolwich, T10 SD

fluorite - Albany, Blue Hill, Calais, Cooper, Deer Isle, Dixfield, Frankfort, Greenwood(?), Hancock, Lewiston, Livermore, Lovell, Mount Desert, Newry, Paris, Portland, Sanford, Stoneham, Stonington, Stow, Thomaston, Tunk Lake pluton, Wells, Winslow, T10 SD

forsterite - Addison, Bristol, The Forks, Katahdin Iron Works, Lincolnville, Oakfield, Saint George, Union, Warren; many other locations

fourmarierite - Greenwood(?), Newry

francolite = carbonate-fluorapatite

franklinite(?) - Rumford

fuchsite = chromian muscovite; Brunswick, Freeport, Gardiner, Jim Pond Twp

fulgarite = sand fused by lightning; Waterville

fullers earth = montmorillonite or, improperly, any white clay, diatomite, etc.

gahnite - Auburn, Blue Hill, Bowdoin, Bowdoinham, Greenwood, Norway, Stoneham, Stow, Surry, Topsham, West Paris

gainesite - Newry

galena - Acton, Addison, Alder Stream Twp, Aurora, Batchelders Grant, Belfast, Bingham, Blue Hill, Brooksville, Bucksport, Camden, Carmel, Carthage, Castine, Cherryfield, Columbia, Concord, Corinna, Crawford, Deer Isle, Denmark, Dennysville, Dexter, Dixfield, Dover-Foxcroft, East Madison, Eastport, East Wilton, Ellsworth, Embden, Exeter, Fort Fairfield, Franklin, Garland, Gouldsboro, Guilford, Hampden, Hancock, Hermon, Jackson, Jonesport, Kezar Falls, Knox, Lamoine, Lebanon, Levant, Lincolnville, Lubec, Marion, Milton, Monson, Moscow, Mount Glines, Newfield, New Gloucester, New Limerick, Newry, Orington, Owls Head, Parmachenee (T5 R5 WBKP), Parsonsfield, Pemroke, Penobscot, Phillips, Porter, Prospect, Rangeley, Ripley, Robbinston, Rockland, Rockport, Rumford, Saint Albans, Scarborough(?), Sedgwick, Sorrento, Sullivan, Thomaston, Topsham, Trescott, Union, Vassalboro, Verona, Warren, Wesley, West Falmouth, Whiting, Willimantic, Winslow, Woodstock

ganophyllite - Hammond, TD R2 WELS, T9 R3 WELS

garnet = a group of minerals; see almandine, andradite, grossular, spessartine, uvarovite
garnierite(?) - Alder Stream Twp, Jim Pond Twp, Warren
gedrite - Grafton Twp, Harpswell
gersdorffite - Union
gibbsite - Litchfield
glucine - Paris
goethite - Blue Hill, Brooksville, Houlton, Katahdin Iron Works, Linneus, Little Deer Isle, Lubec, Newry, Penobscot, Stoneham, Trescott, Waterville; many bog iron locations, etc.
gold - Acton, Albion, Ashland, Augusta, Avon, Bailey, Baileyville, Baring, Bingham, Blue Hill, Brooksville, Bucksport, Byron, Calais, Caratunk, Carmel, Carrabassett, Carrying Place; Catherine Hill, Cherryfield, China, Columbia, Concord, Corinna, Cutler, Dallas Plantation, Dead River, Dennistown, Dennysville, Dexter, Dover-Foxcroft, Ellsworth, Etna, Eustis, Exeter, Farmington, Gardiner, Gouldsboro, Greenfield, Hampden, Hancock, Harmony, Harrington, Haynes, Hiram, Houghton, Kirby Stream, Jackson, Kennebec River upper tributary, Kezar Falls, Knox, Lamoine, Lincoln, Lincolnville, Livermore, Lowell, Madrid, Marshfield, Milton, Moose River, Moscow, Mount Abraham, Mount Vernon, Newfield, New Portland, New Sharon, Oakland, Orland, Orrington, Palmyra, Paris, Parmachenee (T5 R5 WBKP), Parsonsfield, Pembroke, Penobscot, Phillips, Pittsfield, Pittston, Prospect, Rangeley, Readfield, Rockport, Rumford, Saco, Saint Albans, Saint John River, Sandy River Plantation, Shirley, Skowhegan, Sorrento, Southwest Harbor, Steuben, Stow, Strong, Sullivan, Swans Island, Trescott, Verona, Waterboro, Wesley, Willimantic, Winthrop, Woodstock, T3 R5 BKP WKR, T5 R6 BKP WKR, T31 MD BPP
gold telluride(?) - Sorrento, Sullivan
gorceixite - Buckfield, Newry
goyazite - Buckfield, Greenwood, Hebron(?), Newry, Paris, Rumford, Stoneham
graftonite - Greenwood
graphite - Augusta, Bangor, Bath, Belfast, Bethel, Blue Hill, Bowdoinham, Brooksville, Brunswick, Buckfield, Camden, Canton, Cape Elizabeth, Carthage, Charlotte, Crocker Hill, Dixfield, Dover-Foxcroft, East Sangerville, Farmington, Freeport, Gardiner, Georgetown, Greenwood, Hampden, Lebanon, Lewiston, Lincolnville, Litchfield, Madrid, Marion, Marshfield, Monmouth, Newry, Norway, Paris, Peru, Phillips, Phippsburg, Pittston, Pownal, Presque Isle, Raymond, Readfield, Rockland, Rumford, Sandy River Plantation, Sangerville, Scarborough, Searsport, Sebago, Sumner, Thomaston, Turner, Union, Vinalhaven, Warren, Windham, Woodstock, Yarmouth
grayite - Topsham
greenockite - Brooksville, Newry, Paris, Standish, Sanford
grossular - Ashland, Auburn, Bath, Bethel, Blue Hill, Carthage, Casco, Cornish, Cushing, Farmington Falls, Gray, Hebron, Limerick, Mapleton, Minot, Newfield, Newry, Paris, Parsonsfield, Phippsburg, Presque Isle, Raymond, Rumford, Sanford, Washburn, Woodstock
grunerite - Palermo
gummite = a mixture of uranium minerals; Auburn, Georgetown, Greenwood, Newry, Rumford, Stoneham
gypsum - Brooksville, Linneus, Oakland, Pembroke, Saco(?), Skowhegan(?), Sullivan(?)
halite - Brooksville, Kittery, Perry, Winter Harbor, York; found as temporary films formed by evaporation of sea water
halloysite - Hebron, Paris, Rockland, Thomaston
hamlinite = goyazite
hastingsite - Tunk Lake pluton, Wayne
hatchettolite = variety of microlite/pyrochlore; Newry
hausmannite - Mt. Katahdin (T9 R3 WELS), TD R2 WELS
hedenbergite - Belfast Quadrangle, Brooks Quadrangle, Island Falls Quadrangle, Knox, Raymond(?), Rumford(?)
hematite - Alexander, Aroostook, Arrowsic, Aurora, Baldwin, Bar Harbor, Barnard, Belfast, Blue Hill, Bridgton, Brooksville, Brunswick, Buckfield, Castle Hill, Cherryfield, Hampden, Hancock County, Hodgdon, Howland, Katahdin Iron Works, Knox, Linneus, Lubec, Mapleton, Monson, Mount Desert, Newry, New Sweden, Norridgewock, North Yarmouth, Penobscot, Perham, Phippsburg, Pleasant Ridge Plantation, Portland, Rangeley, Rockland, Rumford, Saco, Southport, Stoneham, Stonington, Topsham, Tremont, Turner, Vinalhaven, Wade, Waite, Warren, Washburn, Wayne, Woodland, Woodstock; many other locations
hemimorphite - Brooksville, Lubec, Pembroke
hercynite - Carrabassett Valley, Stoneham(?), Union, Warren
herderite(?) - herderite is not found in Maine, all tested specimens are hydroxyl-herderite
heterosite - Baldwin, Greenwood, Newry, Norway, Paris, Peru, Rumford, Standish, Stoneham, Warren, (found at triphylite locations)
hiddenite = a variety of gemmy, green chromian-spodumene not found in Maine; false reports made on non-gem, non-chromian spodumene; Newry
hisingerite(?) - Paris
holmquistite - Rockport
hornblende - split into two species: magnesiohornblende and ferrohornblende
hornstone = fine-grained quartz resembling chert; Belfast, Topsham
huebnerite(?) - Blue Hill
humite-group mineral - Belfast Quadrangle, Norway
hureaulite - Buckfield, Greenwood, Newry, Paris, Rumford, Stoneham
hurlbutite - Paris(?), Rumford
hyalite = variety of transparent common opal; usually composed of poorly crystalline tridymite
hydronephelite = mixture of gibbsite, natrolite, and diaspore; Litchfield, West Gardiner
hydroxylapatite - Auburn, Buckfield, Greenwood, Hebron, Newry, Norway(?), Paris, Rumford, Stoneham
hydroxyl-herderite - Albany, Auburn, Bowdoinham, Buckfield, Georgetown, Greenwood, Hebron, Newry, Norway, Paris, Poland, Rumford, Stoneham, Topsham, West Paris

hydrozincite - Blue Hill(?), Brooksville(?), Deer Isle, Pembroke
hypersthene = enstatite
ice - usually seasonal; Greenwood Ice Caves, Mahoosuc Notch
 Ice Caves
iddingsite = altered olivine
idocrase = vesuvianite
illite = altered muscovite; Auburn; abundant in glacial tills
ilmenite - Byron, Cutler, Dallas Plt, East Moxie Twp, Farmington, The Forks, Gorham, Greenwood, Harpswell, Katahdin Iron Works, Leeds, Newfield, Newry, Oakfield, Phippsburg, Rangeley, Rockland, Stoneham(?), Stonington, Topsham, Union, Warren, Waterford(?), Wayne, Windham
ilmenorutile - Albany
iolite = cordierite
iridium - Hermon (exsolution in platinum?), Rangeley
iridosmine(?) - Dallas, Rangeley
ishikawaite - Topsham
jade = non-technical name given to fine-grained amphibole (usually nephrite), jadeite, serpentine, etc. for lapidary use; Eustis
jahnsite group - Auburn
jahnsite-(CaMnFe) - Newry, Rumford
jahnsite-(CaMnMn) - Newry, Paris
jahnsite-(MnMnMn) - Greenwood, Stoneham
jarosite - Smalls Falls Formation (outcrop surface)
kaersutite - Auburn
kainosite-(Y) - Mount Desert
kamphaugite-(Y) - Mount Desert
kaolinite - Auburn, Blue Hill, Buckfield, Concord, Denmark, Milton, Newry, Paris, Parsonsfield, Poland, Rumford, Stow, Thomaston, Wales, Warren, Woolwich; glacial-lake clays(?)
kasolite - Greenwood
kermesite = schafarzikite; Linneus
kerolite (cerolite) = a mixture of minerals; Rockland, Thomas-ton, Warren
killinite = fine-grained muscovite; Newry, Peru
kivuite(?) - Newry
kosnarite - Paris
kryzhanovskite = landesite; Greenwood
kunzite = a pink, gem variety of spodumene; Andover(?), Auburn, Georgetown, Newry
kyanite - Bowdoinham(?), Clark Island, Freedom, Gorham, Grafton, Litchfield(?), Palermo, Paris(?), Pittston, Raymond, Standish, Upton, Waldoboro(?), Warren(?), Westbrook, Windham
labradorite = sodic anorthite; Addison, boulders in Carrabasset River valley, Chapman, Dead River valley, Lewiston, Litchfield, Parsonsfield, Rumford, Sanford(?), South Berwick, Thomaston, Union, Warren, York
lacroixite - Hebron
landesite - Buckfield, Greenwood, Newry(?), Poland
laueite - Baldwin, Buckfield(?), Greenwood, Newry(?), Paris, Rumford(?)
laumontite - Brooksville, Calais, Chisholm, Machias, Machias-port, Phippsburg(?)

lazulite - Georgetown, Newry(?)
lead(?) - apparent misidentification or reference to the chemical content of ore?; Cape Elizabeth (artifacts?)
lead oxides(?) - Trescott
lepidocrocite - Pembroke
lepidolite - Auburn, Brunswick(?), Buckfield, Georgetown, Greenwood, Hebron, Lewiston(?), Minot(?), Newry, Norway, Oxford, Paris, Poland, Raymond(?), Rumford, Standish, Stoneham(?), Topsham, Warren, Waterford, Winslow(?)
lepidomelane = ferrian annite; Litchfield, West Gardiner
leucophosphite(?) - Greenwood
leucopyrite = löllingite
leverrierite = altered muscovite; Auburn
limonite = impure earthy goethite; many bog iron locations; Abbot, Anson, Argyle, Arrowsic, Atkinson, Augusta, Aurora, Barnard, Bath, Blue Hill, Bridgton, Bristol, Brownville, Buckfield, Bucksport, Camden, Canton, China, Clinton, Dexter, Dixfield, Dover-Foxcroft, Farmington, Gardiner, Greenbush, Greenwood, Harmony, Harpswell, Harrington, Hodgdon, Houlton, Howland, Jay, Katahdin Iron Works, Lebanon, Liberty, Linneus, Lisbon, Moxie Gore, Naples, Newfield, New Limerick, New Portland, Orland, Oxbow Plantation, Paris, Pembroke, Phillips, Phippsburg, Pittston, Rangeley, Raymond, Rumford, Saco, Salem, Sebec, Shapleigh, Skowhegan, Somerville, Strong, The Forks, Thomaston, Trescott, Troy, Turner, Union, Wade, Wales, Warren, Wells, West Forks Plantation, Whitefield, Williamsburg, Winslow, Winthrop, T3 R7 WELS, T8 R7 WELS; many other locations
linarite - Brooksville, Garland, Lubec
linnaeite - Katahdin Iron Works(?)
litchfieldite = nepheline and cancrinite-bearing rock
lithiophilite - Auburn, Buckfield, Greenwood, Hebron, Newry(?), Norway, Paris(?), Poland, Rumford(?), Stoneham(?), Warren(?)
lizardite - Jim Pond
löllingite - Auburn, Bowdoin, Greenwood, Hebron, Newry, Paris, Poland, Rumford, Standish
ludlamite - Auburn, Greenwood, Newry, Paris, Rumford, Stoneham
mackinawite - Brooksville, Union, Warren
macle = chiastolite (in the sense of Cleaveland, 1816)
magnesiochromite(?) - Stoneham
magnesiohornblende - Grafton, Hermon, Newry, Upton
magnesite - Deer Isle, Jim Pond Twp, Portland, TD R2 WELS, T9 R3 WELS
magnetite - Addison, Alder Stream Twp, Alfred, Andover, Auburn, Augusta, Baileyville, Bar Harbor, Bath, Bethel, Biddeford, Black's Island, Blue Hill, Bridgton, Brooksville, Brownfield, Brunswick, Buckfield, Byron, Calais, Camden, Casco, Casco Bay islands, Castine, Castle Hill, Catherine Hill, Chapman, Crawford, Dedham, Deer Isle, Denmark, Farmington, The Forks, Frankfort, Franklin, Gardiner, Gouldsboro, Greenwood, Guilford, Hartland, Hermon, Hodgdon, Houlton, Isle au Haut, Jay, Jefferson, Jonesboro,

Jonesport, Katahdin Iron Works, Lakeville, Leeds, Lincolnville, Linneus, Litchfield, Long Island Plantation, Lubec, Marshalls Island, Marshfield, Milbridge, Monhegan, Moosehead lake (T2 R6), Mount Desert, Mt. Katahdin Twp, Muscle Ridge Islands, Newfield, New Limerick, Newry, Norridgewock, Northeast Harbor, Patten, Perry, Phillips, Pownal, Raymond, Rumford, Saint George, Salem, Sanford, Searsport, Smithfield, South Thomaston, Steuben, Stoneham, Stonington, Sullivan, Swans Island, Thomaston, Topsham, Tremont, Union, Vinalhaven, Warren, Waterford, Wayne, Wells, West Gardiner, Whitefield, Winslow, Woolwich, T3 R5 BKP WKR, T5 R7 BKP WKR; many other locations

malachite - Alder Stream Twp, Blue Hill, Brooksville, Brunswick(?), Castine, Eastport, Garland, Gouldsboro, Guilford, Hancock, Lamoine, Litchfield(?), Newry, Pembroke, Perry(?), Phippsburg, Steuben, Topsham, Warren, Woolwich

manganapatite = manganese fluorapatite, usually fluorescent; Albany, Auburn, Buckfield, Greenwood, Newry, Norway, Paris, Rumford, Stoneham

mangangordonite - Newry

manganite(?) - Buckfield, Newry, Rumford

manganocolumbite - Auburn, Buckfield, Greenwood, Newry, Paris, Rumford, Topsham

manganophyllite - Auburn

manganotantalite - Auburn, Buckfield, Greenwood, Newry, Rumford, West Paris

marcasite - Brooksville, Calais(?), Concord(?), East Moxie Twp, Katahdin Iron Works, Linneus, Monson, New Portland, Oakfield, Paris, Skowhegan, The Forks Plt, Union, Warren, Winslow

margarite - Camden, Rangeley, Stoneham(?), Township E, Winslow(?)

margarodite - see muscovite; Rumford, Stoneham

marialite - Raymond, Rumford(?)

mcbrillsite - Paris

meionite - Casco, Cornish, Farmington Falls, Greenwood, Minot, Newfield, New Limerick, Parsonsfield, Phippsburg, Rumford, Sanford, Vassalboro

melanterite(?) - apparently a post-mine growth; Acton, Brooksville, Concord, Dixfield, East Andover, Greenwood, Hebron, Katahdin Iron Works, Rumford, Saco, Wales, Winthrop, T6 R8 WELS

messelite - Newry

metastibnite - Linneus

meteorites - Andover, Camden(?), Castine, Freedom(?), Friendship(?), Nobleboro, Northport(?), Searsport, Waterville(?)

mica groups - see annite, biotite, chamosite, chlorite, cimolite, clinochlore, cookeite, damourite, illite, killinite, lepidolite, leverrierite, manganophyllite, margarite, muscovite, phlogopite, pinitite, sericite

microcline - Albany, Auburn, Bath, Bethel, Boothbay, Bowdoin, Bowdoinham, Brunswick, Buckfield, Canton, Edgecomb, Freeport, Fryeburg, Georgetown, Greenwood, Hallowell, Hebron, Leeds, Lewiston, Lisbon, Litchfield, Livermore,

Livermore Falls, Minot, Mount Desert Island, Newcastle, Newry, Norway, Oxford, Orland, Paris, Peru, Phippsburg, Poland, Pownal, Raymond, Rumford, Stoneham, Southport, Southwest Harbor, Stow, Topsham, Township D, Tremont, Waterford, Woolwich, T10 SD; many other locations

microlite - Albany(?), Auburn, Brunswick, Buckfield, Georgetown, Gorham(?), Greenwood(?), Newry, Paris, Poland, Rumford, Stoneham(?), Topsham, Township D, West Paris

millerite(?) - Casco(?)

mimetite - Garland

mispickel = arsenopyrite; Bethel, Greenwood, Hebron, Newfield

mitridatite - Auburn, Greenwood, Newry, Paris, Rumford, Stoneham

molybdenite - Alder Stream Twp, Argyle(?), Auburn(?), Augusta, Belfast, Blue Hill, Bowdoinham(?), Bradstreet Twp, Brunswick, Buckfield, Caratunk(?), Carmel, Cooper, Damariscotta(?), Franklin, Greenwood, Hebron(?), Littleton, Machias, Marshfield, Mount Desert, Newfield, Norridgewock, Norway, Paris, Poland, Sanford, Surry, Topsham, Tremont, Union, Warren, Whiting, T10 SD

molybdite = name formerly given to ferrimolybdite

monazite-(Ce) - Blue Hill, Brunswick, Eustis, Gardiner, Newry, Pownal, Rumford, Stow, Topsham

montebrasite - Auburn, Buckfield, Georgetown, Greenwood, Hebron, Newry, Paris, Peru, Poland, Rumford, Stoneham, Topsham, Township D, Warren(?)

montmorillonite - Auburn, Buckfield, Georgetown, Greenwood, Hebron, Newry, Norway, Paris, Rumford, Stoneham, Township D

moraesite - Greenwood, Newry, Paris

morganite = a pink, gem variety of beryl; Auburn, Buckfield, Greenwood, Newry, Paris, Poland

muscovite - Albany, Andover, Auburn, Batchelders Grant, Bethel, Blue Hill, Bowdoin, Bowdoinham, Brunswick, Buckfield, Canton, Edgecomb, Freeport, Frye, Fryeburg, Gardiner, Georgetown, Gilead, Greenwood, Hebron, Jonesboro, Leeds, Lewiston, Limington, Litchfield, Lovell, Ludlow, Lyman, Mexico, Monmouth, Newry, Norway, Oxford, Paris, Parsonsfield, Peru, Phippsburg, Poland, Pownal, Raymond, Roxbury, Rumford, Southport, Stoneham, Stow, Topsham, Unity, Waldoboro, Waterboro, Waterford, Wayne, West Bath, Winslow, Winterport, Woodstock, Woolwich, Township D, Township E, T10 SD; many other locations

nacrite(?) - Leeds, Unity

natrolite - Litchfield, Perry, Windham(?)

neotocite - TD R2 WELS, T9 R3 WELS

nepheline - Gardiner, Litchfield, Monmouth, Newfield, West Gardiner

niccolite = nickeline

nickeline - Blue Hill, Byron(?), Calais(?), Rumford, Union

niggliite - Union, Warren

nontronite - Auburn, Topsham

novaculite = probably diatomaceous earth (Cleaveland, 1816) rather than the modern variety of quartzite; The Forks

nsutite - Parlin Pond Twp

- ochre** = an earthy pigment usually of goethite, hematite, or manganese oxides; Bridgton, Buckfield, Dixfield, Howland, Lisbon, Naples, Paris, Rumford,
- olenite-elbaite** - Stoneham
- oligoclase** = calcic albite; Denmark, Gouldsboro, Lewiston, Marshfield, Noisy Brook gneiss, Norway; many other locations
- olivine group** - see fayalite and forsterite
- opal** - Albany, Auburn, Brunswick, Buckfield, Casco, Freeport, Fryeburg, Greenwood, Mexico, Newry, Paris, Rumford, Standish, Topsham, Warren; see hyalite and tridymite
- orpiment(?)** - Newfield
- orthite** = allanite-(Ce)
- orthoclase** = a "disordered" microcline; not found in most pegmatites; a variety commonly found in eruptive rocks; see microcline
- ottrelite** = old synonym for chloritoid, now used to designate the manganese-dominant species; intent of original identification probably was chloritoid (q.v.)
- palermoite(?)** - Paris
- pargasite** - Bethel, Parsonsfield, Phippsburg, Sapling Twp, Union
- parsonsite(?)** - Newry
- pectolite(?)** - Cornish, Sullivan
- penninite** - see clinochlore
- pentlandite** - Blue Hill, East Moxie, The Forks, Katahdin Iron Works, Oakfield, Union, Warren
- perhamite** - Greenwood, Newry, West Paris
- perovskite(?)** - Sanford
- perthite** = a mixture (intergrowth) of microcline and albite
- petalite** - Buckfield(?), China(?), Greenwood, Newry(?), Paris, Peru
- phenakite** - Albany, Greenwood(?), Hebron(?), Rumford(?), Stoneham, Stow, Topsham, Waterford(?)
- phengite** - Bradstreet, Sapling
- phetite(?)** - name of unknown significance (Hanley, 1936); Litchfield
- phlogopite** - many locations; important component in many schists; Gardiner, Hebron, Lewiston, Vassalboro Formation
- phosphophyllite** - Newry, Paris, Rumford
- phosphosiderite** - Greenwood, Stoneham
- phosphuranylite** - Georgetown, Hebron, Newry, Paris, Phippsburg, Rumford, Stoneham
- picotite(?)** = chromian spinel; Stoneham
- picrolite** = a gemmy variety of antigorite; Alder Stream Twp, Deer Isle, Jim Pond Twp, T3 R5 BKP WKR
- pigeonite** - Andover, Brooksville, Grafton, Whiting, TD R2 WELS, TE R2 WELS, T9 R3 WELS
- pinite** = a fine-grained, greasy mass of mica, usually muscovite; Greenwood, Newry, Norway, Paris, Rumford, Stoneham, Warren
- plagioclase** = a chemical series between albite and anorthite; varieties include oligoclase and andesine of albite and the varieties labradorite and bytownite of anorthite
- platinum** - Ashland(?), Dallas, Hermon, Rangeley, Salem(?), Union, Warren
- pleonaste** = ferroan spinel
- plumbojarosite(?)** - unsupported assumption that Maine limonite was plumbojarosite-bearing
- pollucite** - Auburn, Brunswick(?), Buckfield, Greenwood, Hebron, Newry, Norway, Paris, Rumford, Stoneham, Township D, West Paris
- polycrase-(Y)** - Topsham
- portlandite(?)** - probably misidentified; Portland
- powellite** - Newfield, Sanford
- prehnite** - Auburn, Calais, Ellsworth(?), Farmington, Grafton, Jay, Livermore, Manchester, Newry(?), Perry, Portland, Sullivan, Winthrop, Woodstock, T3 R11 WELS, TD R2 WELS, T3 R5 BKP WKR
- prochlorite** = clinochlore; Buckfield, Cutler, Eastport, Raymond, Topsham
- proustite(?)** - Sullivan
- psilomelane** = romanechite
- pumpellyite-Fe** - Sapling Twp, Brassua Lake Quadrangle
- pumpellyite-Mg** - regional metamorphic mineral in Aroostook county; Ashland, Castle Hill, Deer Isle, Nashville Plantation, Pembroke, Perham, Perry, Portage Lake, Stockholm, Wade, Westmanland, T12 R7 WELS, T12 R8 WELS, T12 R9 WELS, T13 R5 WELS, T13 R7 WELS, T13 R8 WELS, T13 R9 WELS, T14 R5 WELS, T14 R6 WELS, T14 R7 WELS, T15 R5 WELS, T16 R4 WELS, T16 R5 WELS
- purpurite** - Auburn, Greenwood, Hebron(?), Newry(?), Norway, Paris(?), Peru(?), Rumford(?), Stoneham(?), Warren(?); found only at lithophilite locations
- pyrargyrite(?)** - Franklin, Hancock, Sullivan
- pyrite** - Acton, Addison, Albany, Albion, Andover, Anson, Appleton, Athens, Auburn, Augusta, Baldwin, Bar Harbor, Batchelders Grant, Benton, Bethel, Bingham, Blue Hill, Bowdoin, Bowdoinham, Brooksville, Brunswick, Buckfield, Bucksport, Byron, Calais, Camden, Cape Elizabeth, Carmel, Carthage, Casco, Castine, Castle Hill, Catherine Hill, Cherryfield, China, Clinton, Columbia, Concord, Cooper, Corinna, Deer Isle, Dexter, Dover-Foxcroft, East Madison, Eastport, Ellsworth, Falmouth, Fairfield, Farmington, Frankfort, Franklin, Freeport, Gardiner, Georgetown, Gouldsboro, Greenwood, Guilford, Hallowell, Hampden, Hancock, Harmony, Harpswell, Hermon, Hiram, Hodgdon, Industry, Jackson, Jay, Jewells Island, Jonesport, Katahdin Iron Works, Kennebec, Kennebunk, Kingfield, Knox, Lebanon, Lewiston, Lexington, Lincolnville, Linneus, Litchfield, Long Island Plantation, Lubec, Machias, Machiasport, Manchester, Mapleton, Marshfield, Mason, Milton, Mount Desert, Mount Vernon, Newfield, New Limberick, New Portland, Newry, New Sweden, Norridgewock, North Yarmouth, Owls Head, Oxbow, Paris, Pembroke, Penobscot, Peru, Phillips, Phippsburg, Pittston, Portland, Pownal, Prospect, Raymond, Rockland, Rockport, Rumford, Saco, Saint George, Searsport, Sebec, Sedgwick, Skowhegan, Smyrna, South Berwick, Stoneham, Stonington, South Thomaston, Stow, Sullivan, Surry, Thomasston, Thorndike, Topsham, Trescott, Troy, Turner, Unity, Union, Vassalboro, Verona, Vinalhaven, Wales, Warren,

Waterboro, Waterville, Wayne, Wesley, West Falmouth, Winslow, Winthrop, Woodstock, York, T3 R5 BKP WKR, T10 SD; many other locations
pyrochlore(?) - Buckfield, Newry, Rumford
pyrolusite - not yet verified from Maine
pyromorphite - Gouldsboro, Lubec, Pembroke, Stow
pyrophanite - TD R2 WELS, T9 R3 WELS
pyrophyllite - Carrabassett Valley, Thomaston(?)
pyroxene group - see augite, diallage, diopside, hedenbergite, hiddenite, kunzite, pigeonite, spodumene
pyrrhotite - Acton, Andover, Appleton, Auburn, Bingham, Blue Hill, Brooksville, Brownfield, Bryant Pond Quadrangle, Buckfield, Byron, Byron schist, Carthage, Castine, Cherryfield, Concord, The Forks, Gardiner, Hancock, Katahdin Iron Works, Lewiston, Linneus, Litchfield, Lubec, Newfield, New Limerick, Newry, Norway, Oakfield, Paris, Pembroke, Penobscot, Peru, Phillips, Raymond, Rockport, Rumford, Standish, Stoneham, Union (hexagonal and monoclinic), Warren, Waterford, Wesley, Winslow, Winter Harbor
quartz - Acton, Albany, Auburn, Bowdoin, Bowdoinham, Brooksville, Brunswick, Buckfield, Calais, Casco, Danville, Denmark, Georgetown, Gilead, Greenwood, Hartford, Hebron, Jonesport, Liberty, Lovell, Lubec, Machiasport, Minot, Newry, Norway, Paris, Perry, Peru, Phippsburg, Portland Harbor, Pownal, Rumford, Sanford, Skowhegan, Stoneham, Stow, Topsham, Township D, Warren, Waterford, Westbrook, Woodstock, Woolwich, T10 SD; found in virtually every town
rammelsbergite - Union
reddingite - Auburn(?), Buckfield, Greenwood, Newry(?), Poland(?), Rumford, Stoneham
rhabdophane-(Ce) - Topsham
rhodochrosite - Auburn, Buckfield, Castle Hill, Deer Isle, Franklin, Gouldsboro, Greenwood, Hancock, Houlton(?), Mapleton, Newry, New Sweden(?), Paris, Pembroke(?), Poland, Rumford, Stockholm(?), Woodstock(?), TD R2 WELS, T9 R3 WELS
rhodonite - Blue Hill, Deer Isle, Rumford(?), TD R2 WELS, T9 R3 WELS
riebeckite - Cashes Ledge, Litchfield, Tunk Lake pluton, Wells, York
robertsite - Greenwood
rockbridgeite - Greenwood, Newry, Poland, Rumford, Standish
romanechite - Bethel, Blue Hill, Buckfield, Castle Hill, Dover-Foxcroft, Gardiner, Greenwood, Hebron, Herman, Hodgdon, Linneus, Lubec, Mapleton, Newry, New Sweden, Oxford, Paris, Penobscot, Phillips, Pittston, Rockland, Rumford, Skowhegan, Somerville Plantation, South Berwick, Sumner, Sweden, Thomaston, Topsham, Township C, Waite, Winslow, Woodland, T3 R7 WELS, T6 R8 WELS, T8 R7 WELS
rosasite - Brooksville
roscherite group - Buckfield, Newry, Paris, Rumford
rutherfordine - Newry
rutile - Albany, Bethel, Blue Hill, Brunswick, Farmington, The Forks, Kennebunk, Litchfield, Monmouth, Saint George, Standish, Topsham, Union, Warren, Waterford
safflorite - Brooksville
sahlite (salite) = ferroan diopside; Bethel, Parsonsfield, Rumford
samariskite-(Y) - not found in Maine, see ishikawaite
saponite - Edmunds, Pembroke, Perry
saussurite = a mixture; in this case, zoisite + plagioclase; Bryant Pond Quadrangle
scapolite group - see marialite and meionite
schafarzikite - Linneus
scheelite - Blue Hill, Byron, Cooper, Cornish, Farmington, Franklin(?), Greenwood, Newfield, Norway(?), Parsonsfield, Phippsburg, Porter, Roxbury, Sanford, Township D, T10 SD
schoepite/metaschoepite - Poland
schoonerite - Newry
schorl - Albany, Auburn, Brunswick, Buckfield, Freeport, Georgetown, Greenwood, Mechanic Falls, Minot, Newry, Paris, Peru, Phippsburg, Popham Beach, Rumford, West Paris, Windham; many other locations
scolecite - Windham
scorodite - Georgetown, Greenwood, Minot, Newry, Paris, T12 R8 WELS
scorzalite - Newry
sekaninaite - Carrying Place, Carrying Place Town, Upper Cupuptic Twp.
sericite = fine-grained mica scales; Alder Stream Twp, Blue Hill, Calais, Jonesport, Lovell, Penobscot, Warren
serpentine group - see antigorite, clinochrysotile, picrolite
serpierite - Brooksville
sicklerite - see purpurite
siderite - Baldwin, Blue Hill, Brooksville, Denmark, East Madison, Greenwood, Jim Pond Twp, Mattagamon Lake, Milton, Newry, Old Orchard Beach, Paris, Pembroke, Rockport, Rumford, Traveler Mtn., Windham, Winthrop
sillimanite - Albany, Alexander, Auburn, Bethel, Brunswick, Bucksport, Byron, Gorham, Greenwood, Hanover, Kittery, Monmouth, Northport, North Yarmouth, Norway, Paris, Phippsburg, Rumford, Sabattus, Sidney, Standish, Stoneham, Stow, Sumner, Turner, Waldoboro, Warren, Waterford, Waterville, Windham, Winthrop, Woolwich, etc.
silver - Acton, Blue Hill, Deer Isle, Franklin, Gouldsboro, Hancock, Lowell(?), Pembroke(?), Penobscot, Sedgwick, Sullivan, York(?)
skogbolite = tapiolite; Topsham
smithsonite - Blue Hill, Brooksville, Lubec, Pembroke
sodalite - Litchfield, Newfield, Parsonsfield, West Gardiner
souzalite - Newry
sperrylite - Union, Warren
spessartine - Auburn, Blue Hill, Buckfield, Camden, Harpswell, Palermo, Newry(?), Phippsburg, Rumford(?), Stoneham(?), Topsham(?), Township D
sphalerite - Acton, Auburn, Baldwin, Bingham, Blue Hill, Brooksville, Buckfield, Bucksport, Carthage, Casco,

- Castine, Cherryfield, Concord, Corinna, Crawford, Cutler, Danforth(?), Deer Isle, Dexter, Ellsworth, Garland, Gouldsboro, Greenwood, Guilford, Hampden, Hancock, Jackson, Knox, Lebanon, Levant, Lincolnville, Lubec, Milton, Newfield, Newry, Paris, Parmachenee (T5 R5 WBKP), Parsonsfield, Pembroke, Penobscot, Phippsburg, Prospect, Rangeley, Raymond, Rockport, Rumford, Sanford, Sangerville, Sedgwick, Stoneham, Sullivan, Thomaston, Topsham, Township C, Township D, Township E, Union, Warren, Wesley, Whiting, Woodstock
sphenite = titanite
spinel - Auburn(?), Baileyville, Blue Hill, Calais, Greenwood(?), Norway(?), Sapling, Stow(?), Topsham(?), Tunk Lake pluto, Union, Warren, York
spodiosite(?) - Stoneham
spodumene - Andover(?), Auburn, Buckfield, Cushing, Fryeburg, Georgetown, Gorham(?), Greenwood, Hebron, Litchfield(?), Lovell, Minot(?), Newry, Norway, Paris, Parsonsfield(?), Peru, Poland, Rumford, Standish, Tops-ham, Township D, Township E, Warren, West Gardiner(?), Wilton, Windham(?)
stannite - Bradstreet Twp
staurolite - Andover, Appleton, Belfast, Bingham, Brunswick, Byron, Camden, Carrying Place Twp, China Lake, Farmington, Gorham, Hallowell, Harpswell, Hebron, Islesboro, Jackson, Livermore, Livermore Falls, Monmouth, Mount Abraham, Newry, New Sharon, Old Town, Phippsburg, Readfield, Rumford, Saint John River, Sebago, Sidney, South Windham, Standish, Strong, Temple, Township E, Vassalboro, Windham, Winthrop
staurotide = staurolite
steatite = an impure massive talc; Harpswell, Rockland, Warren
stellerite - Mount Desert
stephanite(?) - Franklin, Gouldsboro, Hancock, Lowell, Sullivan
stevensite - Thomaston
stewartite - Greenwood, Newry, Paris, Poland, Stoneham
stibiconite - Levant, Linneus
stibiotantalite - Topsham
stibnite - Blue Hill, Buckfield(?), Carmel, Hallowell(?), Hampden, Levant, Linneus, Sullivan(?), Vanceboro(?)
stilbite - Blue Hill, Calais, Franklin, Hallowell, Orland, Perry, Stonington, Vinalhaven, T10 SD, T3 R11 WELS
stilpnomelane - Deer Isle, Jim Pond Twp, Upper Enchanted Twp, TD R2 WELS, T9 R3 WELS
strengite - Greenwood, Newry
stromeyerite(?) - Sullivan
struvite = apparent misprint for strunzite
strunzite - Auburn, Greenwood, Hebron, Newry, Norway, Paris, Poland, Rumford, Stoneham, Unity (=Unity, N.H. ?)
sulfur - Acton(?), Brooksville(?), Katahdin Iron works(?), Lin-neus
switzerite-metaswitzerite - Greenwood, Newry
sylvanite(?) - Sorrento
talc - Bethel(?), Blue Hill, Brooksville, Calais(?), Camden, Deer Isle, Dexter, Ellsworth(?), Hampden, Harpswell, Hope, Kirby, Northport, Ovis Island, Portland(?), Rockland, Sidney(?), Sullivan(?), Thomaston, Union, Vassalboro(?), Warren, T3 R5 BKP WKR
tantalite(?) - Buckfield, Byron, Newry, Paris, Rumford, Stan-dish, Topsham, Township E, Warren
tapiolite - Auburn, Brunswick, Newry, Paris, Topsham
tellurium(?) - probably refers to element in ore; Sorrento
tenantite - Blue Hill, Brooksville
tenorite - Pembroke
tetradymite - Sorrento, Sullivan(?)
tetrahedrite - Blue Hill, Carmel, Deer Isle(?), Enfield(?), Gouldsboro, Hampden, Levant, Lowell, Passadumkeag, Penobscot, Steuben, Sullivan
thomsonite(?) - Mount Desert, Thomaston
thorianite - Topsham
thorogummite - Topsham
tirodite - Belmont, Blue Hill, Sears mont
titanite - Albany, Alfred, Andover, Beals Island, Bethel, Bidde-ford, Bristol, Brooksville, Brunswick, Calais, Casco, Cornish, Crotch Island, Farmington, Frankfort, Hancock, Hartland, Jonesport, Kennebunk, Leeds, Litchfield, Long Island Plantation, Lubec, Mapleton, Marshfield, Minot, Mooselookmeguntic granodiorite, New Sharon, Norridge-wock, Phippsburg, Rumford, Saint George, Sanford, Sears-port, South Thomaston, Stonington, Sullivan, Swans Island, Thomaston, Topsham, Union, Wayne, Whitefield, Wood-stock
todorokite - Auburn, Greenwood, Hebron, Newry, Paris, Poland, Stoneham
topaz - Albany(?), Auburn, Brunswick, Buckfield, Greenwood, Hebron, Rumford(?), Stoneham, Stow, Sumner, Topsham, Woolwich(?)
torbernite/metatorbernite - Albany, Auburn, Bowdoinham, Georgetown, Gilead, Greenwood, Newry, Paris, Peru, Phippsburg, Rumford, Stoneham, Topsham, Warren
tosudite - Buckfield
tourmaline group - see dravite, elbaite-olenite, schorl, and uvite
tremolite - Bethel, Blue Hill, Bowdoinham, Brooksville, Calais, Camden, Castine, Ocean Point, Portland, Raymond, Rock-land, Sullivan, Thomaston, Trescott, Union, Warren
tridymite(?) - Warren(?)
triphylite - Auburn(?), Baldwin, Buckfield(?), Frye, Greenwood, Hebron, Newry, Norway, Paris, Peru, Rumford, Stone-ham, Topsham(?), Warren
tripelite - Auburn, Buckfield, Greenwood, Hebron, Newry(?), Poland, Rumford(?), Stoneham
triploidite - Greenwood, Newry
troilite - Katahdin Iron Works
tungstite(?) - Topsham
turgite = iridescent hematite
tyuyamunite(?) - Newfield
ulvöspinel - Union
uraconite = an undefined name; specimens from Maine labeled this way are usually autunite/meta-autunite; Lovell, Stone-ham
uralolite - Newry

- uraninite*** - Albany, Auburn, Buckfield, Greenwood, Minot(?),
 Newry, Paris, Pownal, Rumford, Stoneham, Topsham, Warren
uranophane - Albany, Auburn, Greenwood, Lovell, Newry,
 Norway, Phippsburg, Rumford, Stoneham, Topsham
uranophyllite = misprint for uranopilite
uranopilite(?) - Newry, Rumford
ushkovite - Newry
uvarovite - Union
uvite(?) - Oxford County
vaesite - Union, Warren
valentinite - Linneus
valeriite - Brooksville
vandendriesscheite - Greenwood, Newry
vanmeerscheite-metavanmeerscheite - Newry
vayrynenite(?) - Rumford
verd-antique = a decorative serpentine rock with white line
 patterns, etc.; Deer Isle
vesuvianite - Auburn, Bath, Belgrade, Bethel, Casco, Cornish,
 Farmington Falls, Greenwood, Hebron, Lewiston, Limerick,
 Livermore, Minot, Newfield, North Alfred, Paris, Parsonsfield,
 Peru, Phillips, Phippsburg, Poland, Raymond,
 Roxbury, Rumford, Sanford, Shapleigh, Woodstock
violarite - East Moxie Twp, The Forks, Katahdin Iron Works,
 Oakfield, Union(?)
vivianite - Auburn, Baldwin, Bath, Georgetown, Greenwood,
 Madawaska, Newfield(?), Newry, Peru, Rumford, Stoneham,
 West Paris, York
vorobeyevite = cesian beryl; Buckfield, Greenwood, Paris
wad - a general name for massive black manganese oxides and
 bog manganese; Blue Hill, Dover, Hodgdon, Oxford, Rockland,
 Sumner, Thomaston, York
wagnerite - Blue Hill
wardite - Newry, Poland
wavellite(?) - misidentified eosphorite or roscherite; Newry
wernerite = synonym for scapolite; = meionite in most cases
whitlockite(?) - Newry(?), Poland(?), Rumford(?)
- whitmoreite*** - Newry
wodginite - Buckfield, Greenwood, Newry, Rumford, Township D
woelsendorfite - Greenwood, Newry
wolframite = general name for a series of minerals; see ferberite
 and huebnerite
wollastonite - Cornish, Cherryfield(?), northern Dover-Foxcroft
 Quadrangle(?), Flagstaff Twp, Guilford Quadrangle(?), southeastern Kingsbury Quadrangle(?), Pittsfield Quadrangle, Skowhegan Quadrangle(?), Warren
wulfenite - Lubec, Stow
wurtzite - Newry
xanthoxenite - Newry, Paris, Rumford
xenotime-(Y) - Newry, Topsham
yedlinit = a mineral found by Neal Yedlin at Newry was
 expected to be named yedlinit but eventually was named
 gainesite instead; the chromate mineral from Arizona which
 was named yedlinit is completely unrelated except that it
 was named for Neal Yedlin
yttrocerite(?) = a rare earth-bearing fluorite; Auburn(?), Paris(?)
zanazziite - Newry
zinc blonde = sphalerite
zinnwaldite - Buckfield, Newry, Warren
zircon - Albany, Alfred, Auburn, Baldwin, Biddeford, Blue Hill,
 Bristol, Brunswick, Buckfield, Calais, Cooper, Dedham,
 Farmington, Franklin, Gardiner, Georgetown, Greenwood,
 Hallowell, Hebron, Litchfield, Long Island Plantation,
 Lovell, Ludlow, Marshfield, Monmouth, Mount Desert,
 Newry, New Sweden, Norridgewock, Norway, Oxford,
 Paris, Pownal, Rumford, Saint George, Sanford, Searsport,
 Somerville, South Thomaston, Stoneham, Stonington,
 Topsham, Tremont, Union, Vinalhaven, Warren, Wells,
 West Gardiner, Whitefield, Woodstock
zoisite - Bryant Pond Quadrangle, Cape Neddick, Castine,
 Cornish, Farmington, The Forks, Jonesboro, Lewiston,
 North Haven, South Berwick, Vassalboro, York County



Entrance to old underground workings at the Douglass Copper Mine in Blue Hill. Mine was operated from 1878 to 1883, and in 1918 (Hussey and Austin, 1958). *Maine Geological Survey file photo.*



The Black Hawk zinc-copper mine, located next to Second Pond in Blue Hill, Maine. Photo taken in the mid 1960's. *Maine Geological Survey file photo.*

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Aerial view of Callahan Mine, Brooksville, ca. 1970 (see p. 30). *Photo courtesy of Fred Beck.*



Open pit at the Callahan Mine, Brooksville, ca. 1970, when the mine was active (see p. 30).
Photo courtesy of Fred Beck.

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